Je tohle EKG ještě normální?

JIŘÍ SEINER

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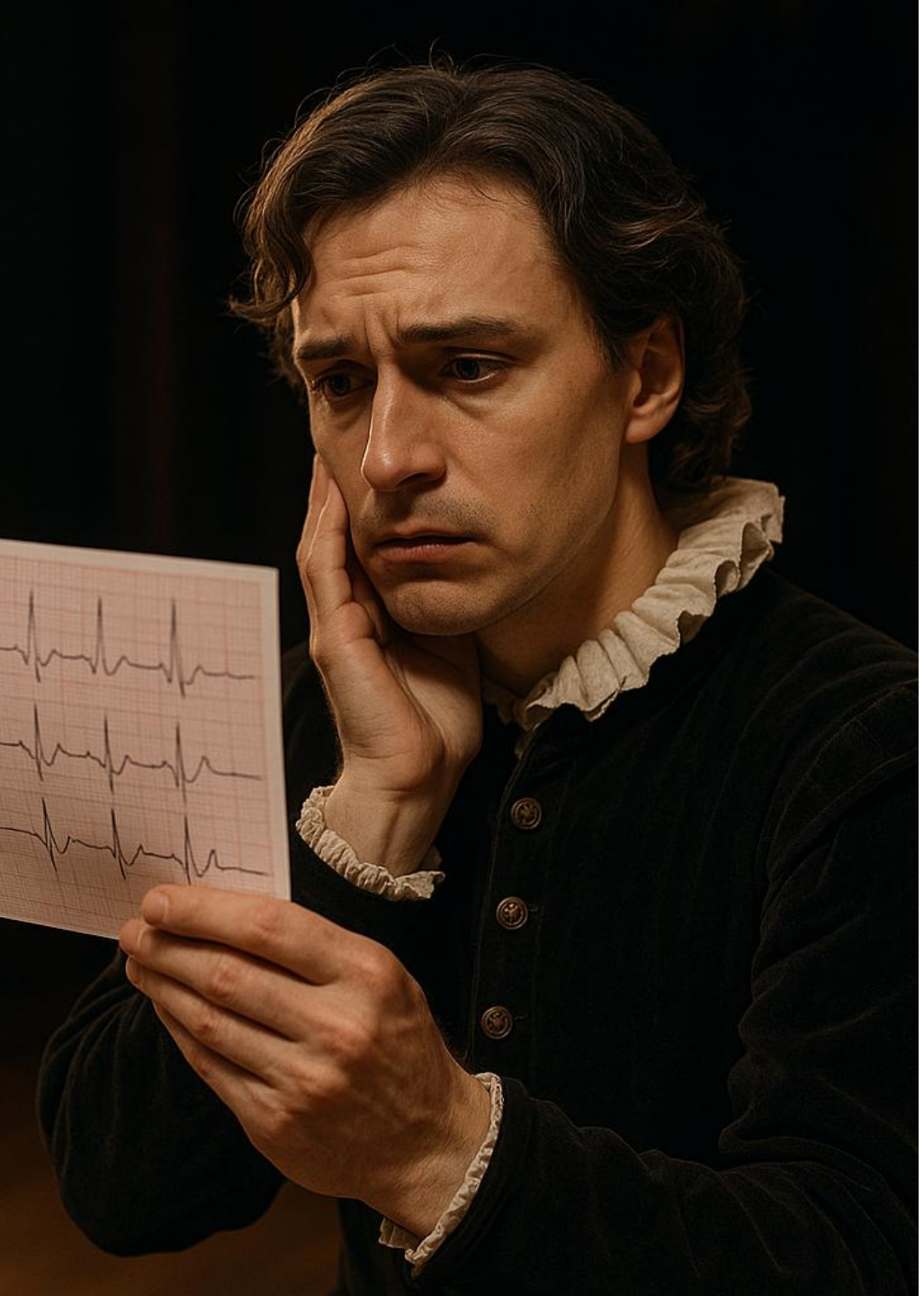
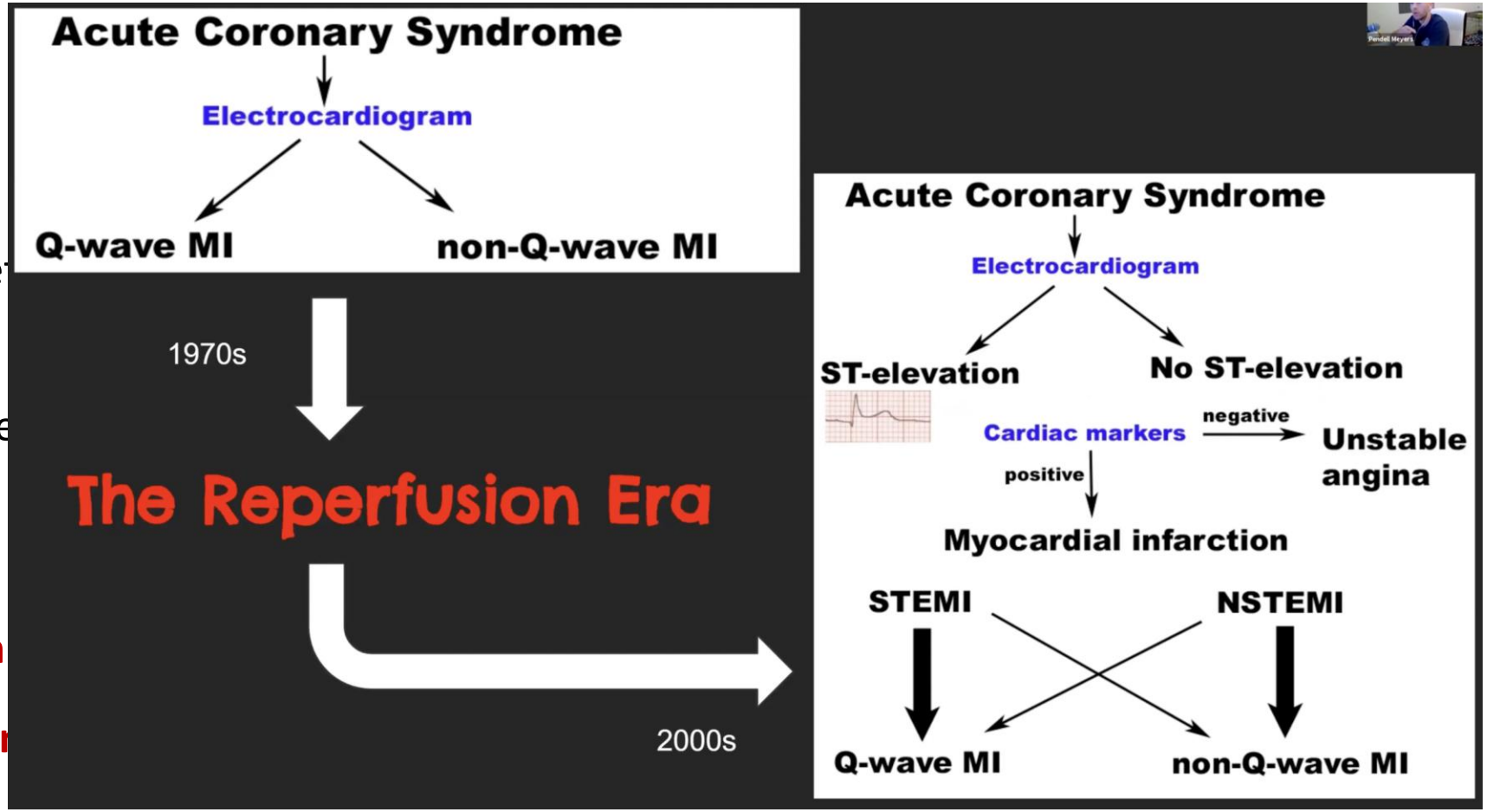


STEMI či nonSTEMI
To je oč tu běží?

- Iniciální rozdělení pacientů zásadně ovlivňuje jejich outcome
- Odkud se vzalo rozdělení na STEMI a nonSTEMI?
- Je toto rozdělení dostateční pro identifikaci všech pacientů vyžadujících reperfuzní léčbu?
- Existuje EKG ekvivalent STEMI ?

STEMI na EKG je podstatné, ale…

- 1980 - DeWood et all – 85% pacientů se STEMI má akutní trombotickou okluzi tepny
- 1988 – ISIS 2 trial – průkaz benef trombolýzy u STEMI
- 1994 – metaanalýza 9 RCT (celke >58000 pacientů) – potvrzen benefit TL u STEMI a LBBB
- **NSTEMI – 25% falešně negativn**
- **STEMI – 15-35% falešně pozitivn**



Credits: dr Pendell Meyers, dr. Smith – ECG blog

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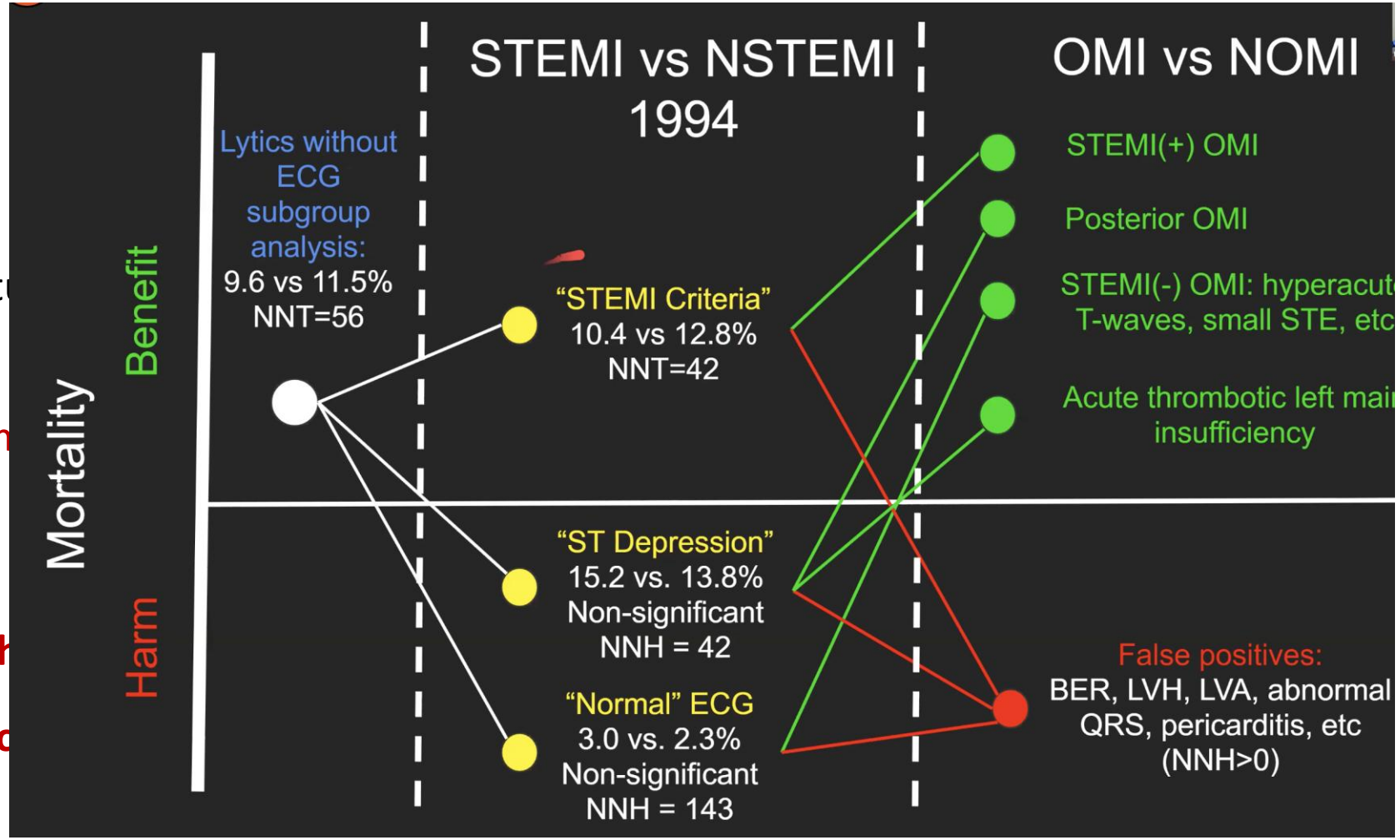

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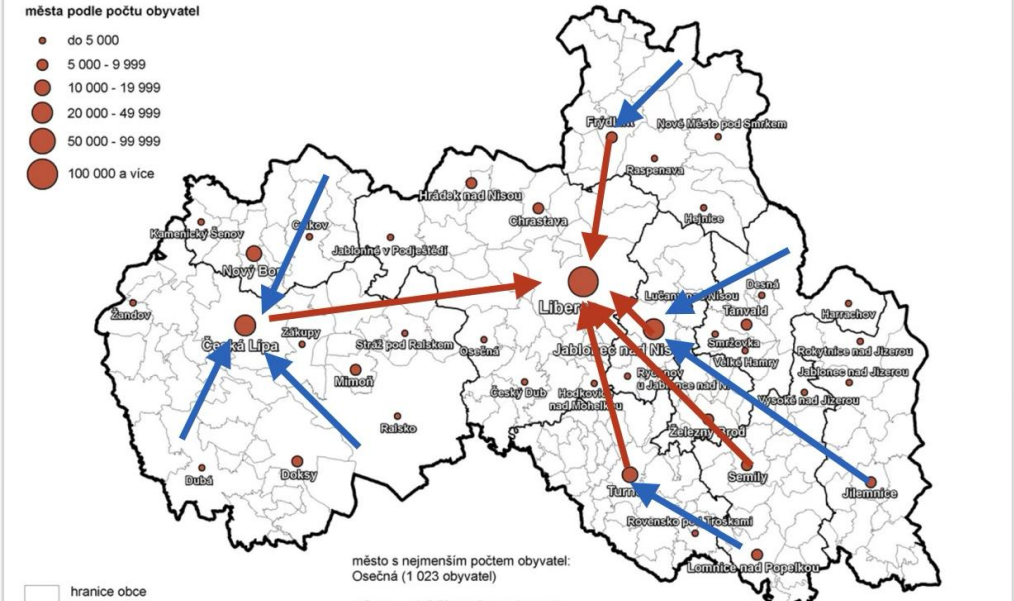
Fibrinolytic Therapy Trialists' (FTT) Collaborative Group
– The Lancet - Volume 343, Issue 8893, 5 February 1994, Pages 311-322



STEMI Equivalents

Conventional STEMI

A

Elevation of ST segment at (or 40-60 ms after) the J point

De Winter syndrome

B

J-point depression and upsloping ST depression in V1-V6 that continues into tall, positive symmetrical T-waves, often with 1-2 mm ST elevation in aVR

Posterior STEMI

C

ST depression ≥0.05 mV (horizontal or downsloping and concave) in V1-V3 (or V4) especially if there is a tall R in V1/V2 with R/S ratio >1 in V2

Wellens sign A

D

Biphasic anterior T waves, not alway accompanied by chest pain

Acute ischemia in LVH

K

ST elevation >25% of QRS amplitude AND (ST elevation in 3 contiguous leads, or T-wave inversions in the anterior leads)

Wellens sign B

E

Deeply inverted anterior T waves, not always accompanied by chest pain

Hyperacute T wave

F

Tall, often asymmetrical, broad-based anterior T-waves often associated with reciprocal ST depression

Sgarbossa criterion 1

G

ST elevation ≥0.1 mV concordant to the QRS in any of the leads I, aVL, V4 to V6.

Sgarbossa criterion 2

H

ST depression ≥0.1 mV concordant to the QRS in any of the leads V1 to V3.

Sgarbossa criterion 3modified

I

ST elevation with amplitude >25% of the depth of the preceding S-wave with discordant QRS complex (leads V1 to V3)

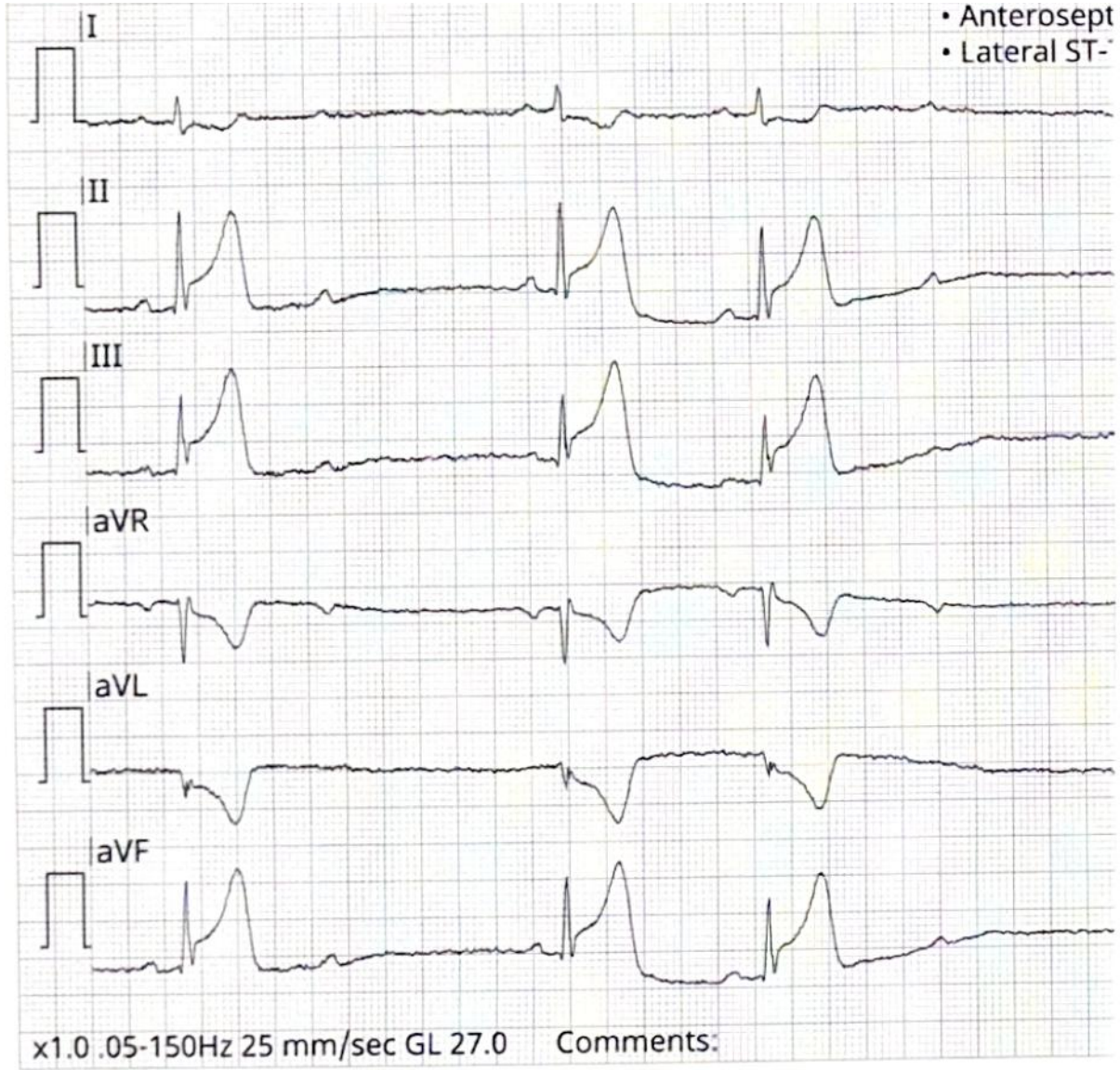
"Shark fin"

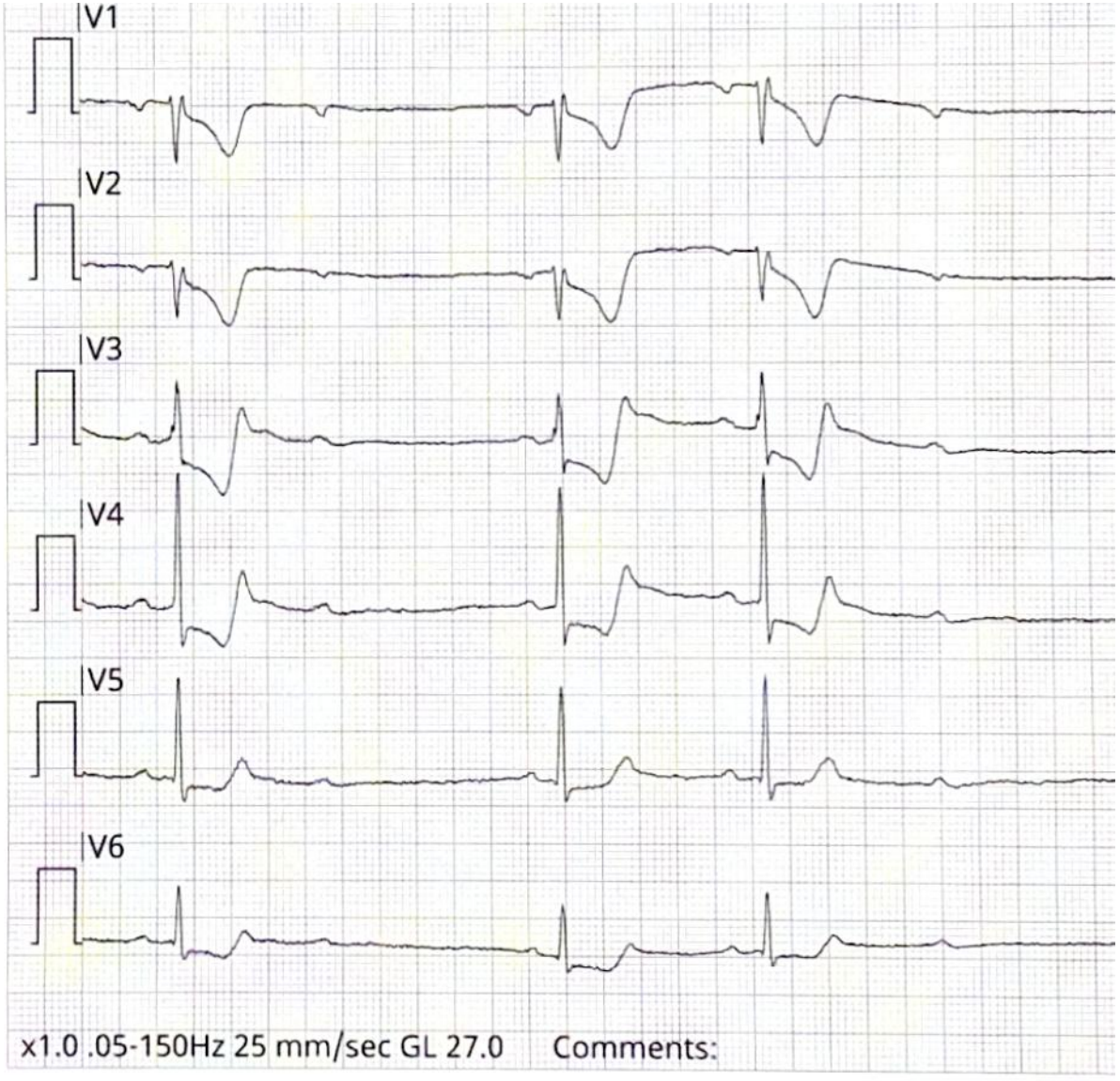
J

J-point transitioning in a convex ST-segment (T wave indistinguishable from ST-segment due to extreme ST deviation)

Triáž k aktivace FASTRACKu na katlab ?

EKG 1 – bolesti na hrudi, synkopa





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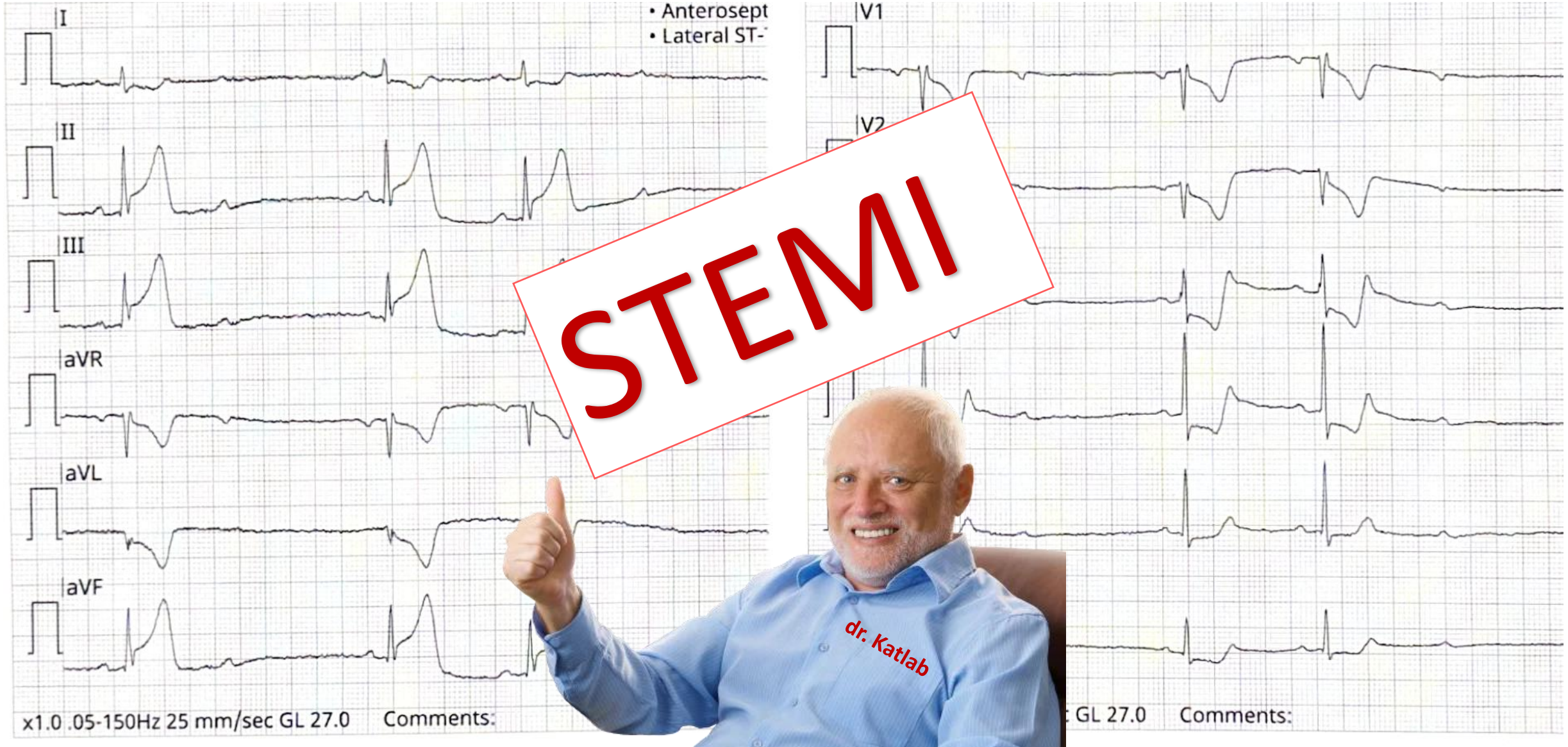
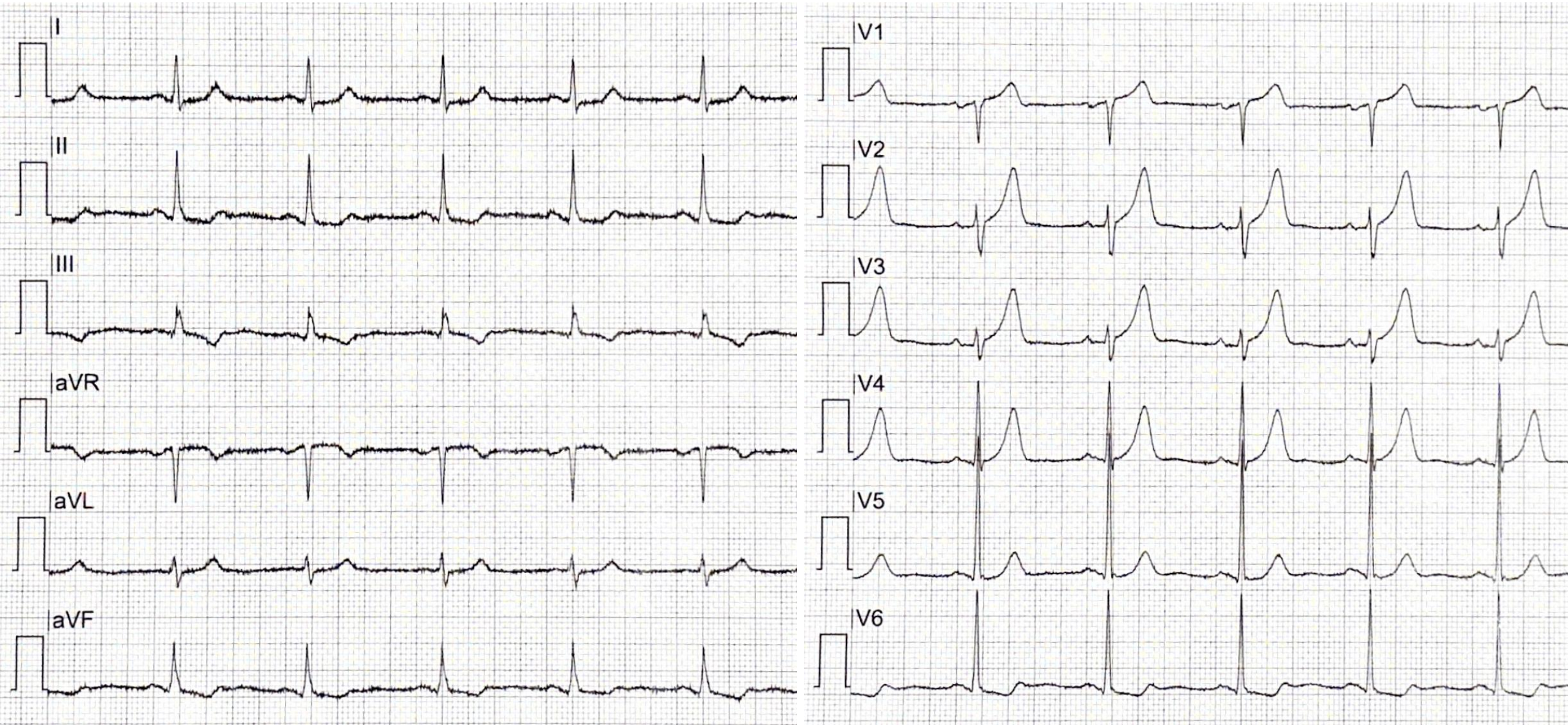


EKG 2 – bolesti na hrudi 30min



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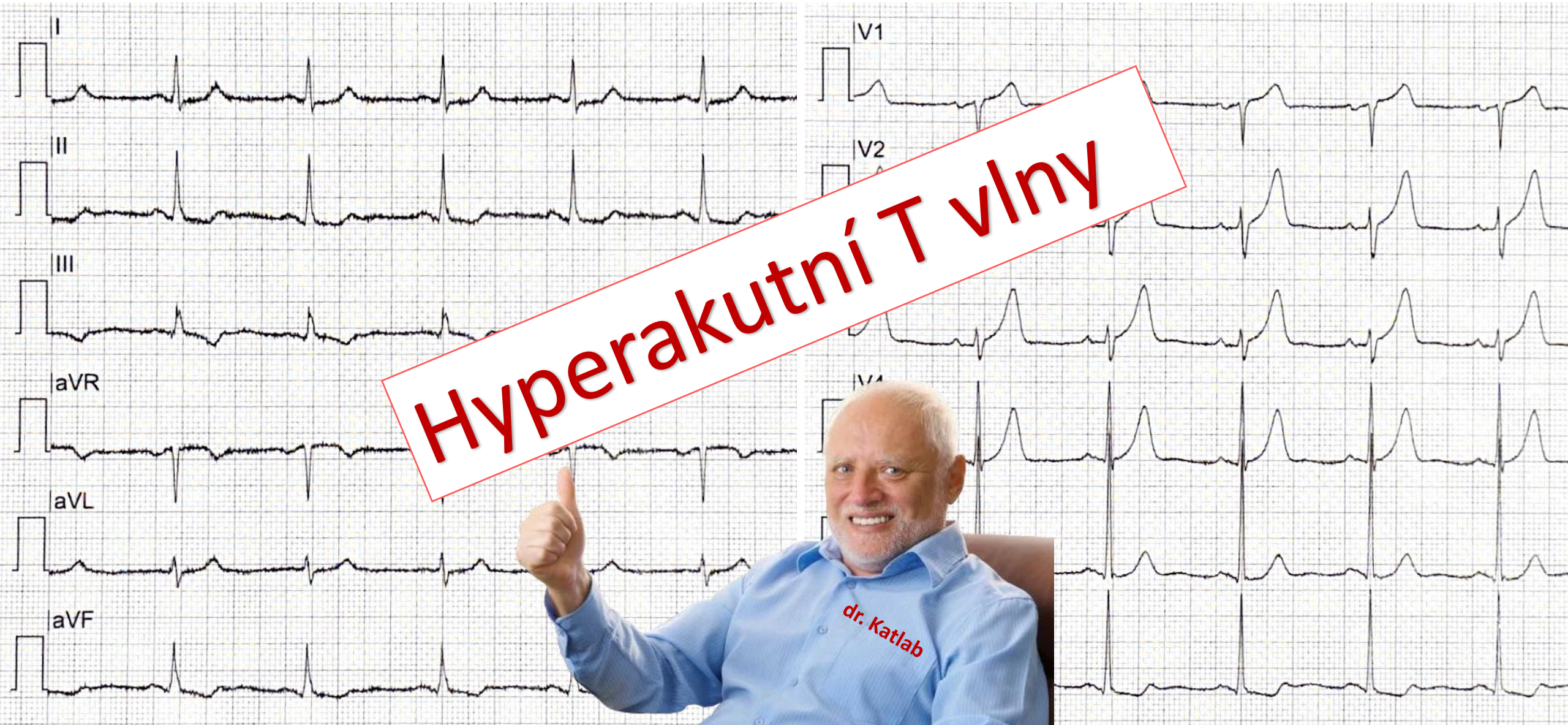
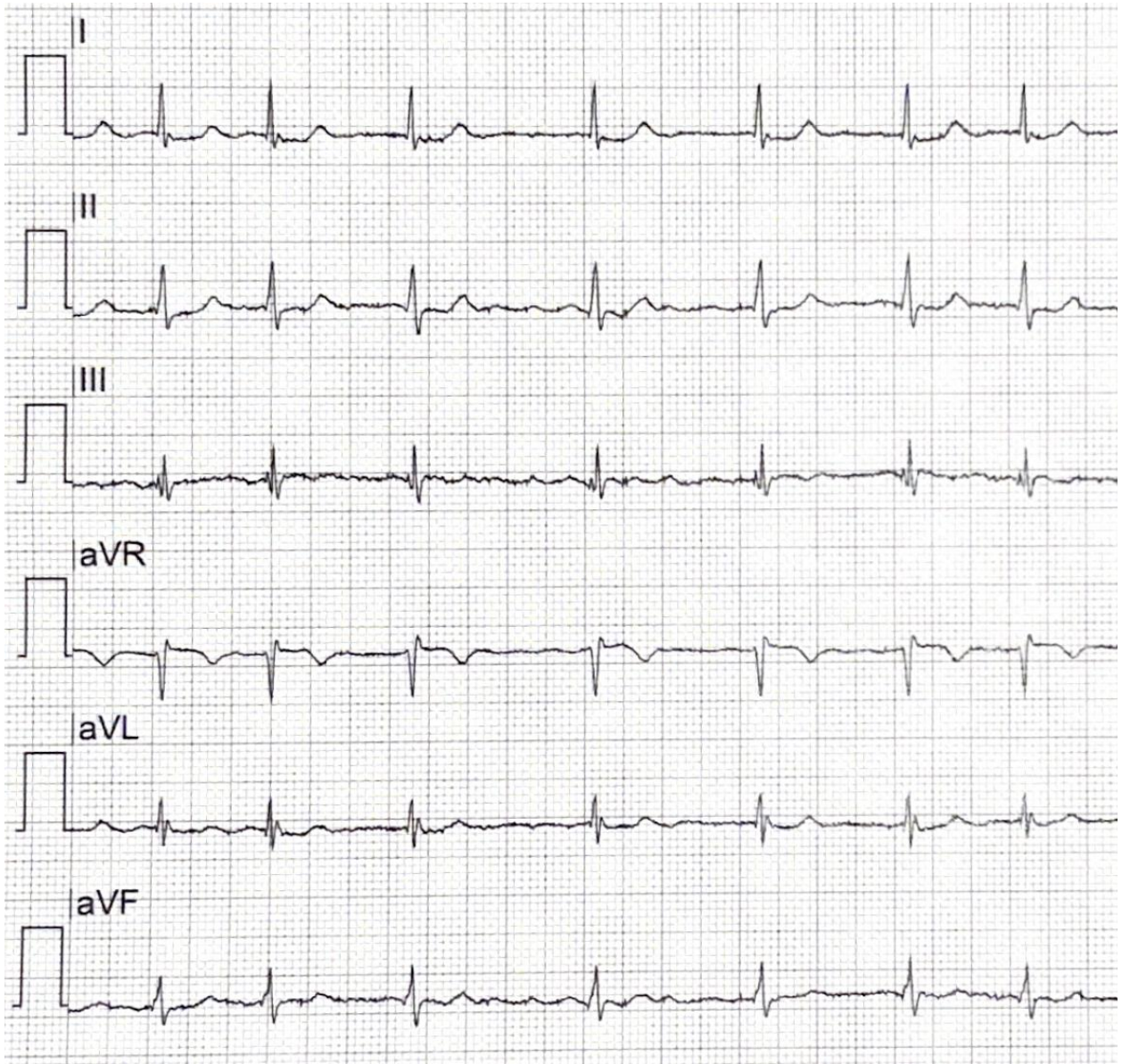
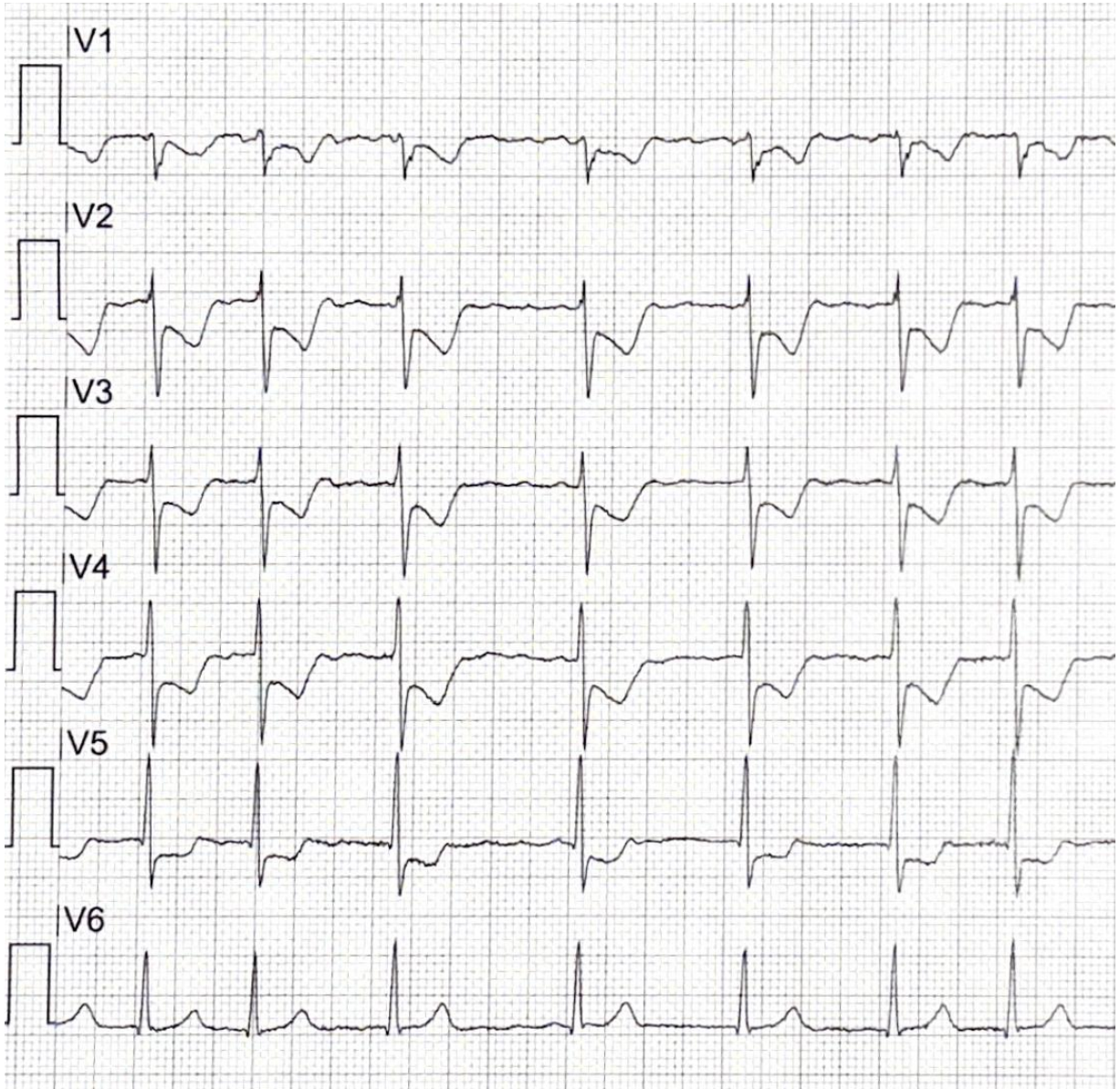
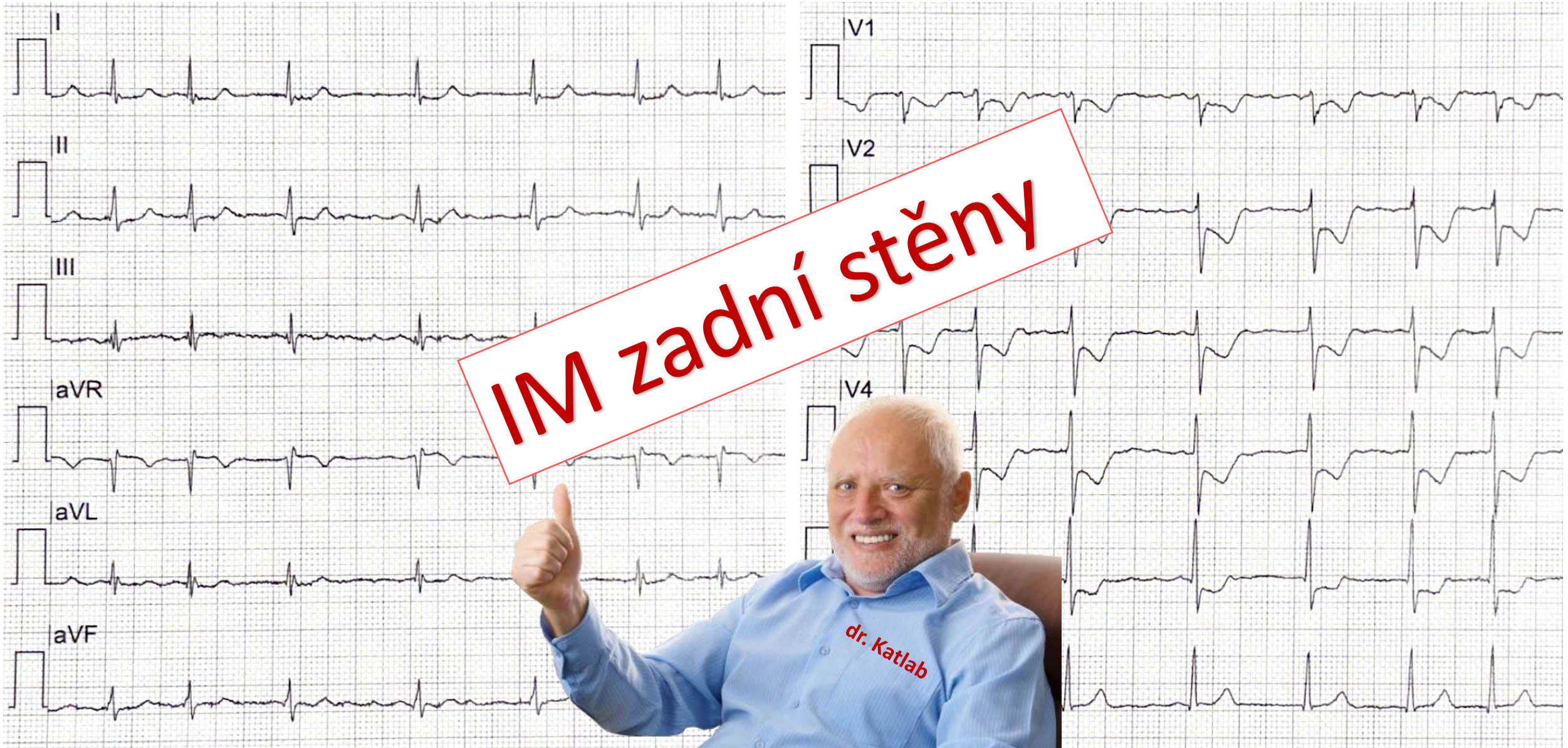


EKG 3 – bolesti na hrudi

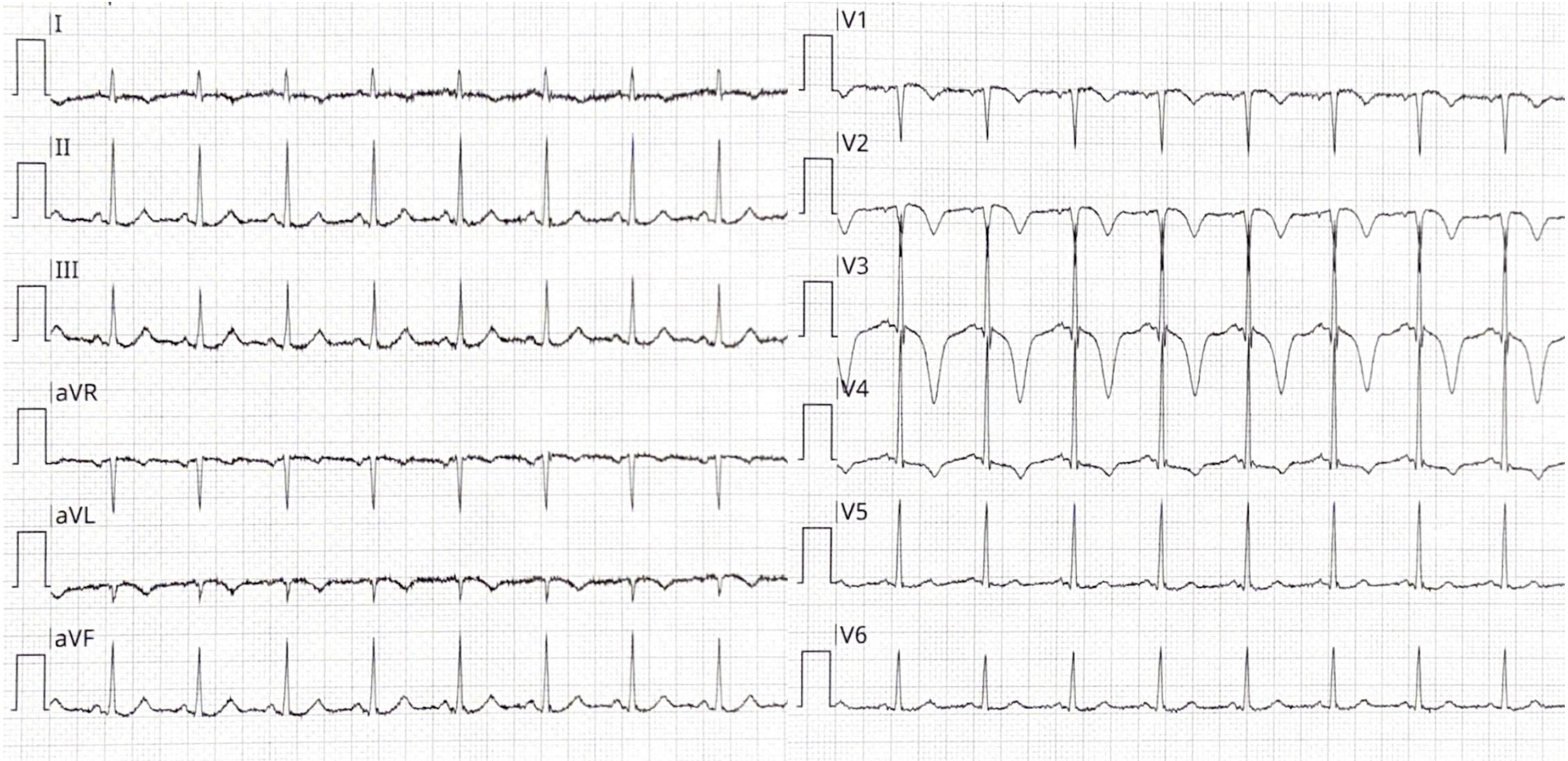




EKG 3 – bolesti na hrudi



EKG 4 – „koktající“ bolesti na hrudi



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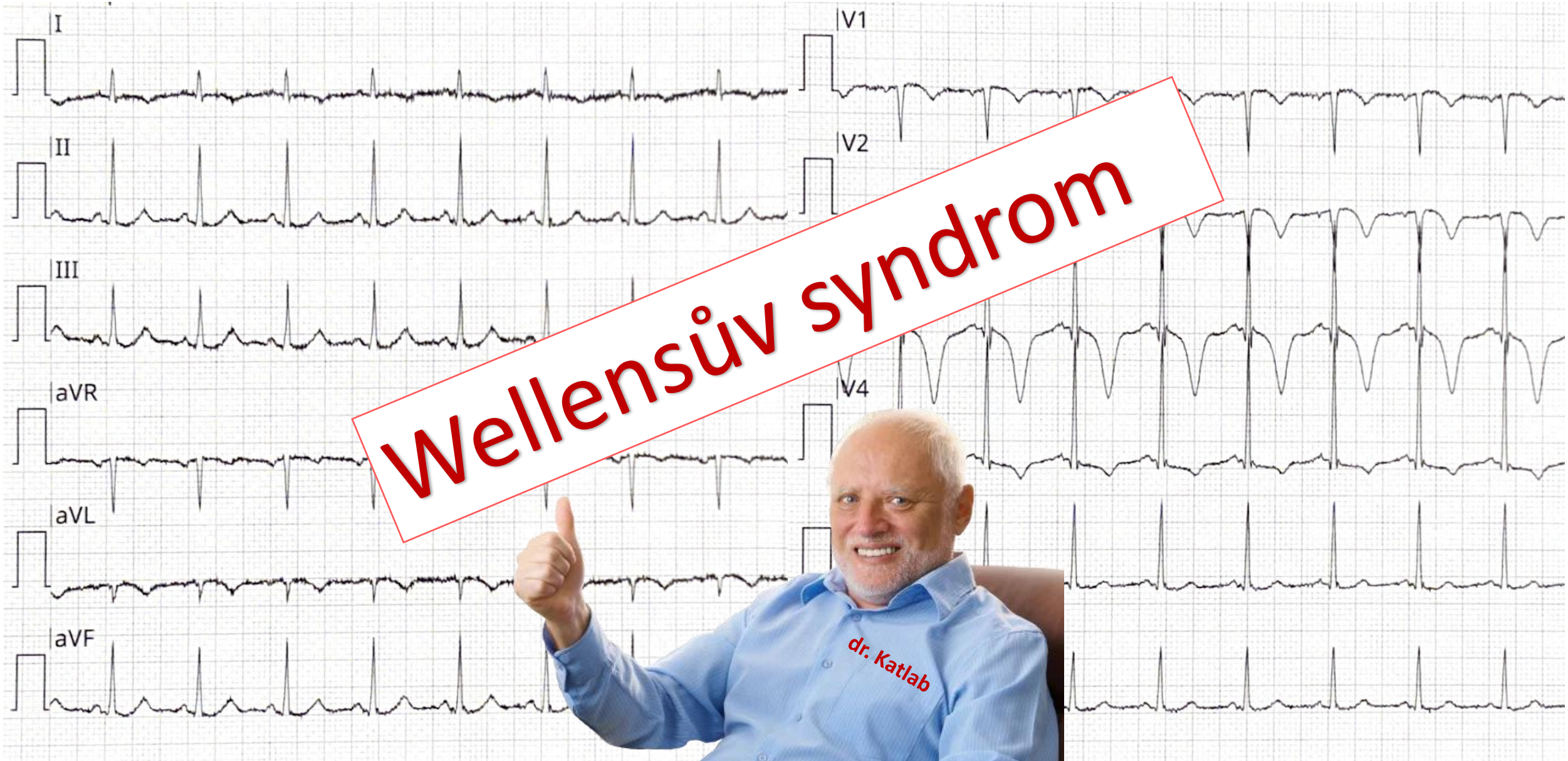
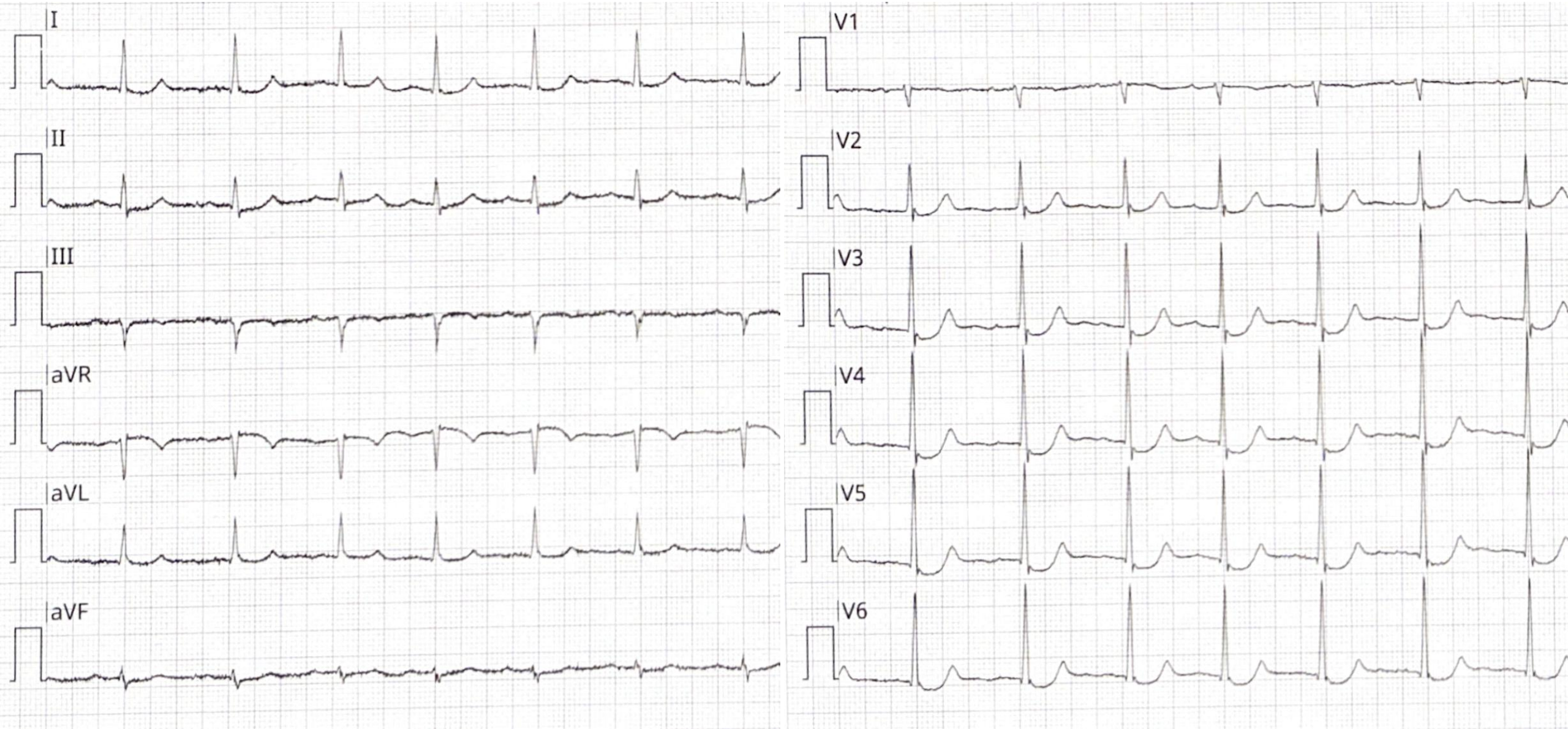


EKG 5 – bolesti na hrudi 30min



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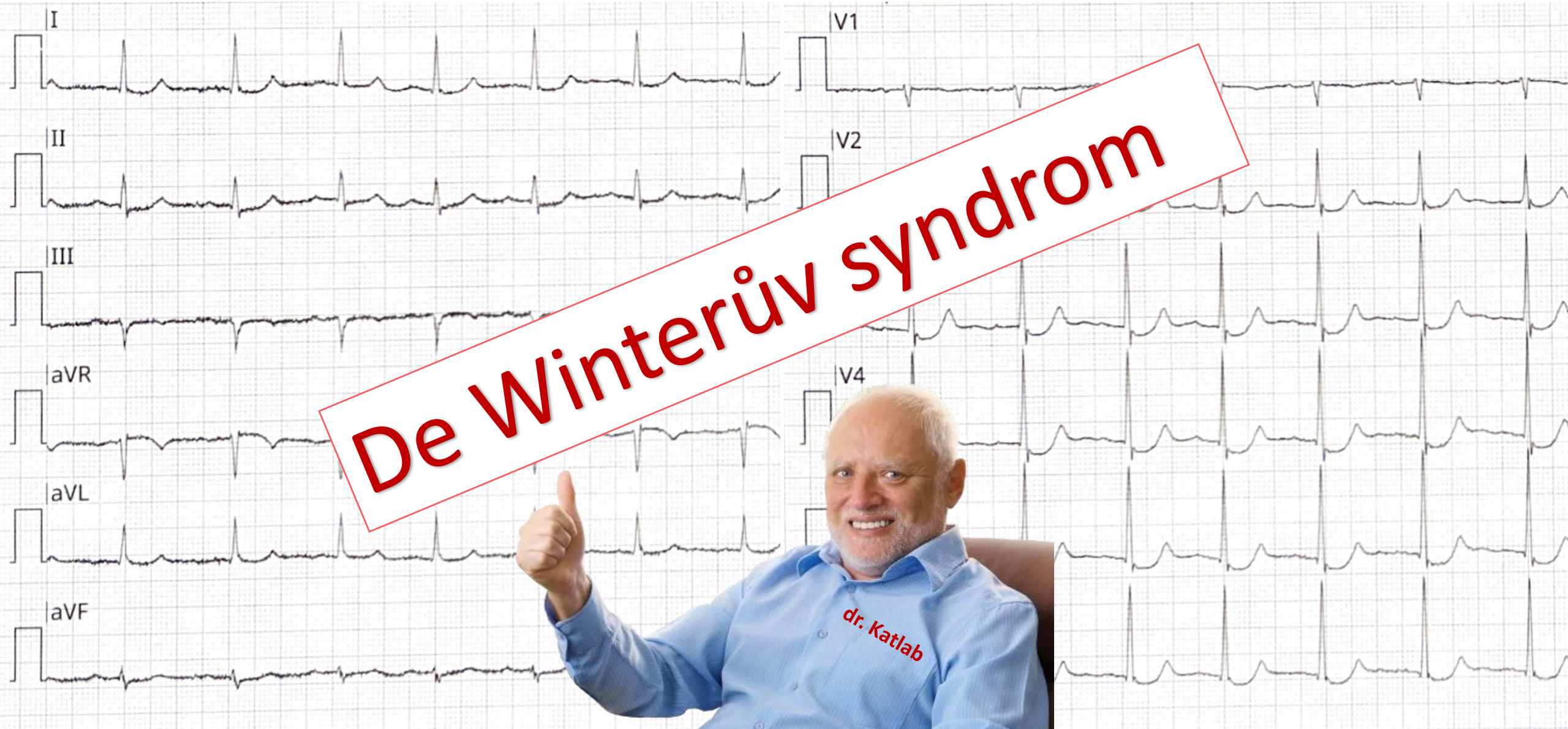
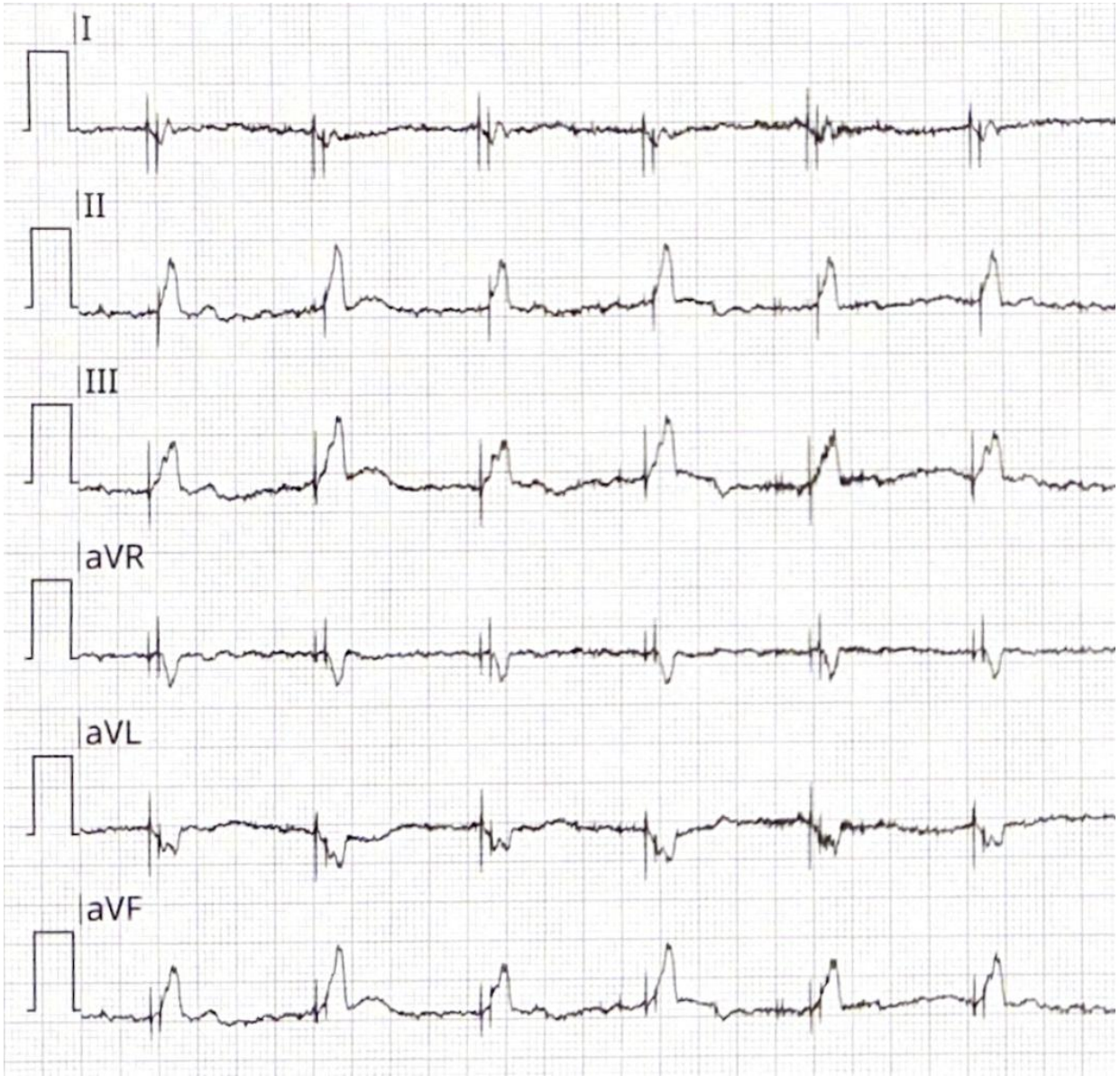
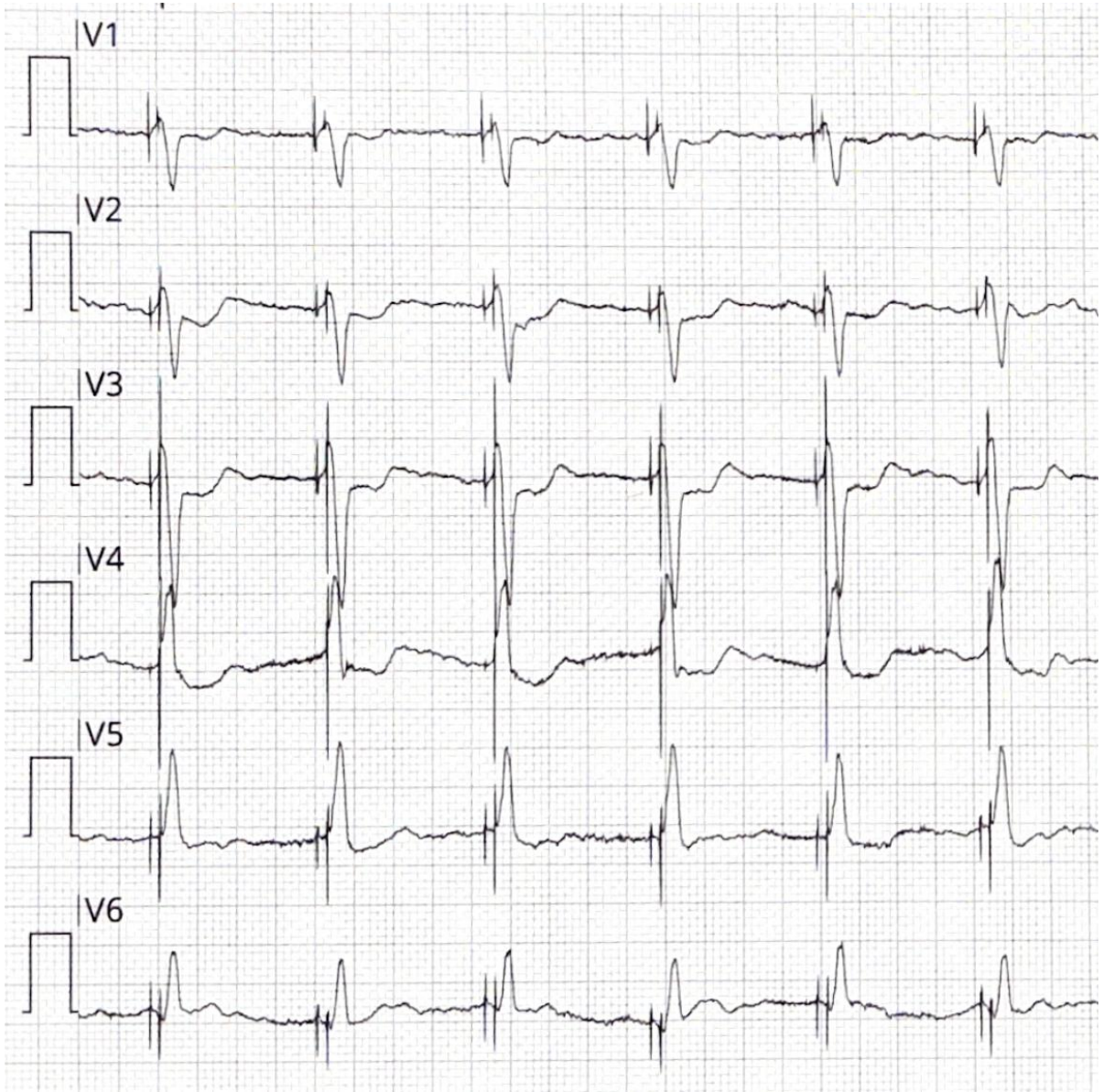


EKG 6 – bolesti na hrudi + stim. rytmus nebo LBBB





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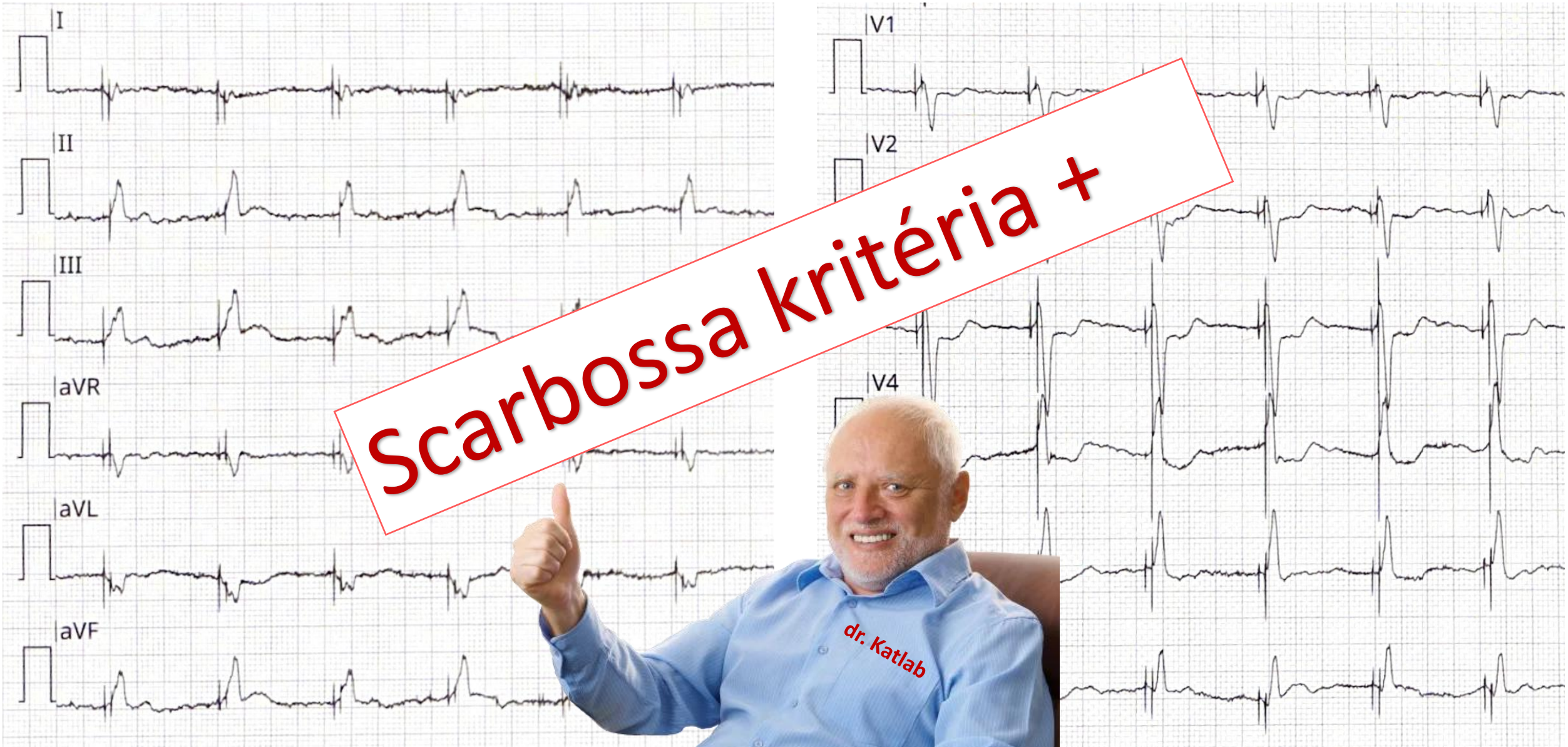
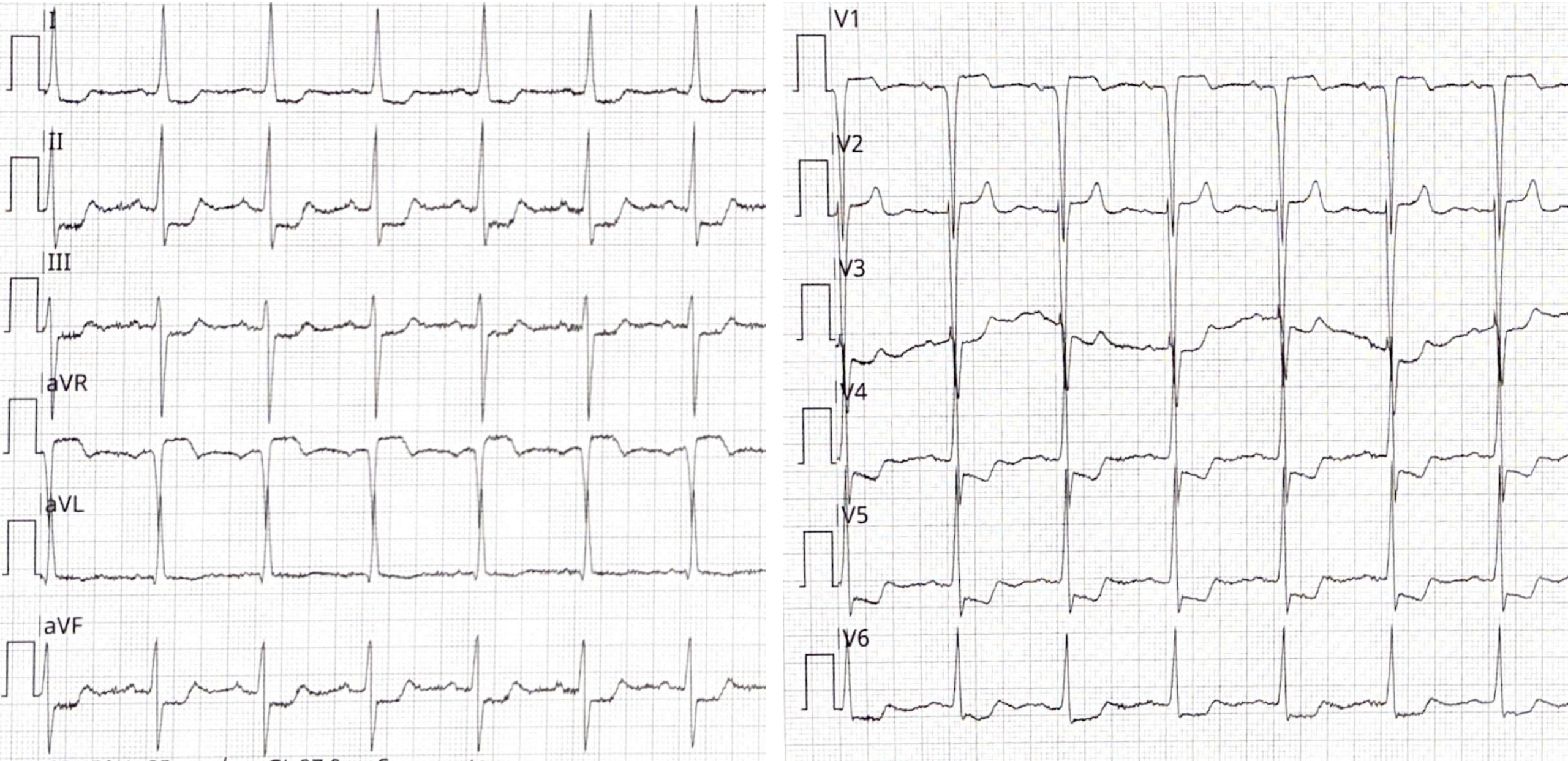
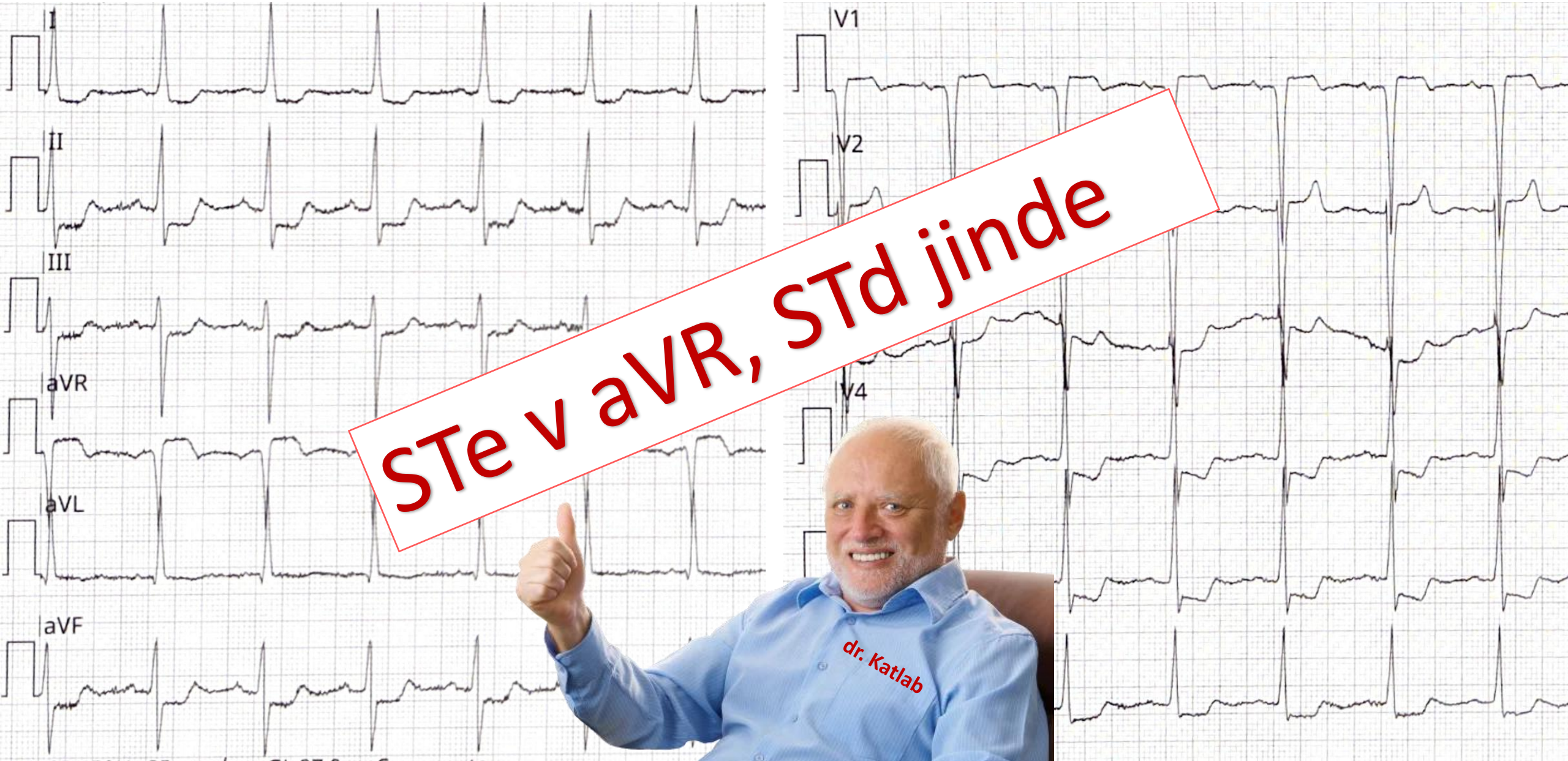


EKG 7 – bolesti na hrudi + srdeční selhání

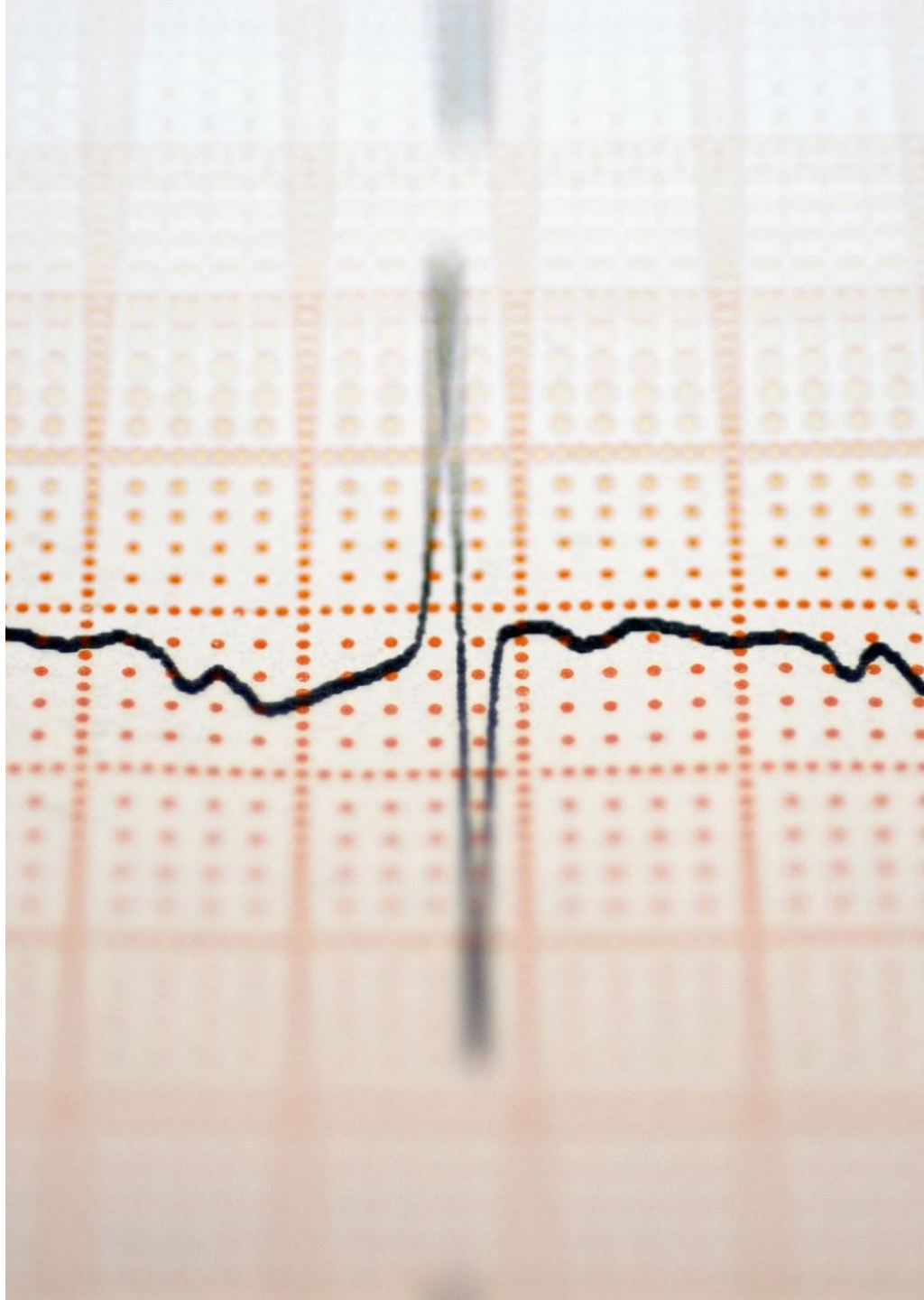


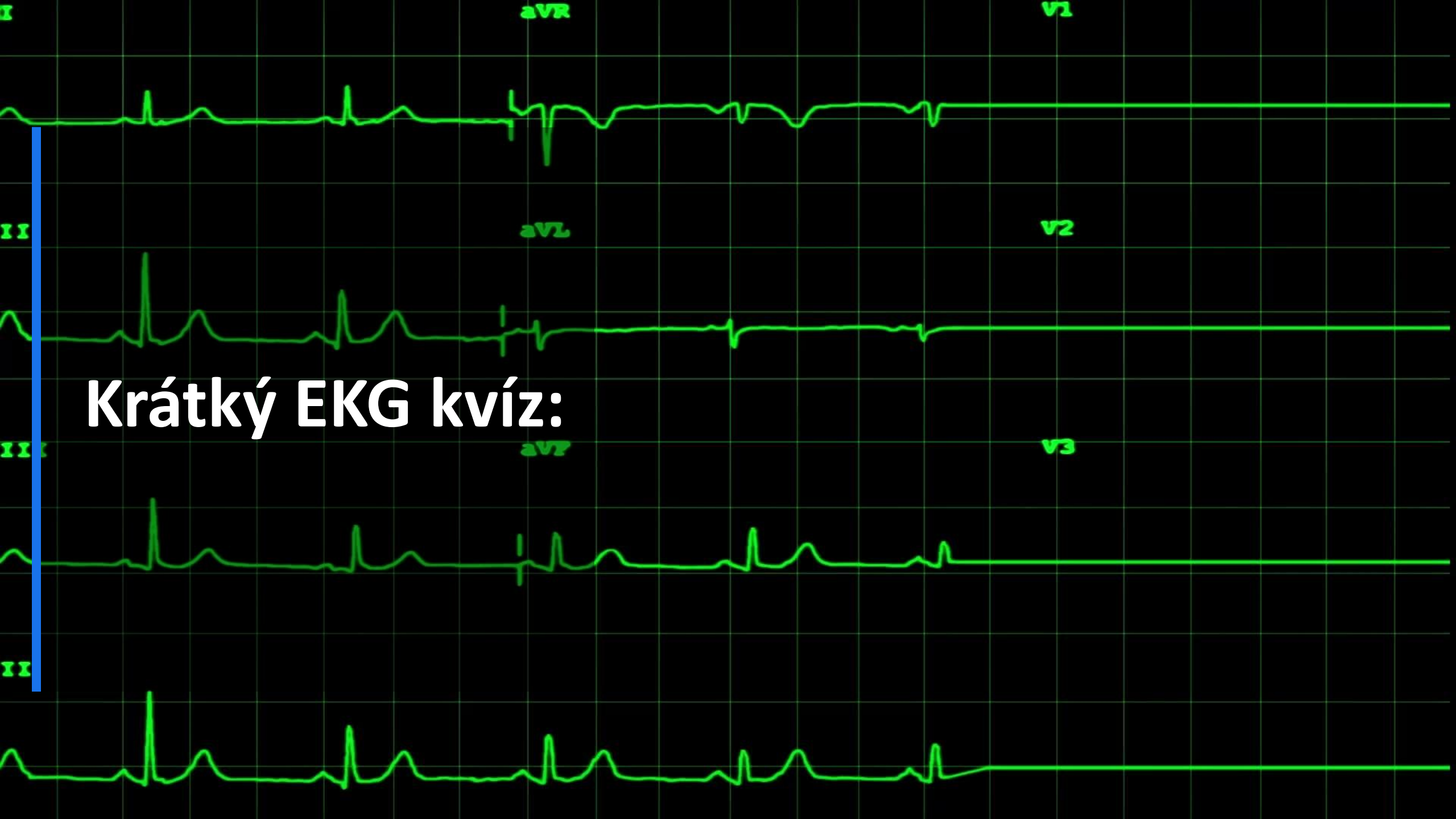
EKG 7 – bolesti na hrudi + srdeční selhání



4+ kroky, jak neprováhat OMI

- Řiď se klinikou
- Zopakuj EKG v krátkém čase
- Udělej ECHO
- Poraď se
- (Využij AI – např. PM Cardio,…)



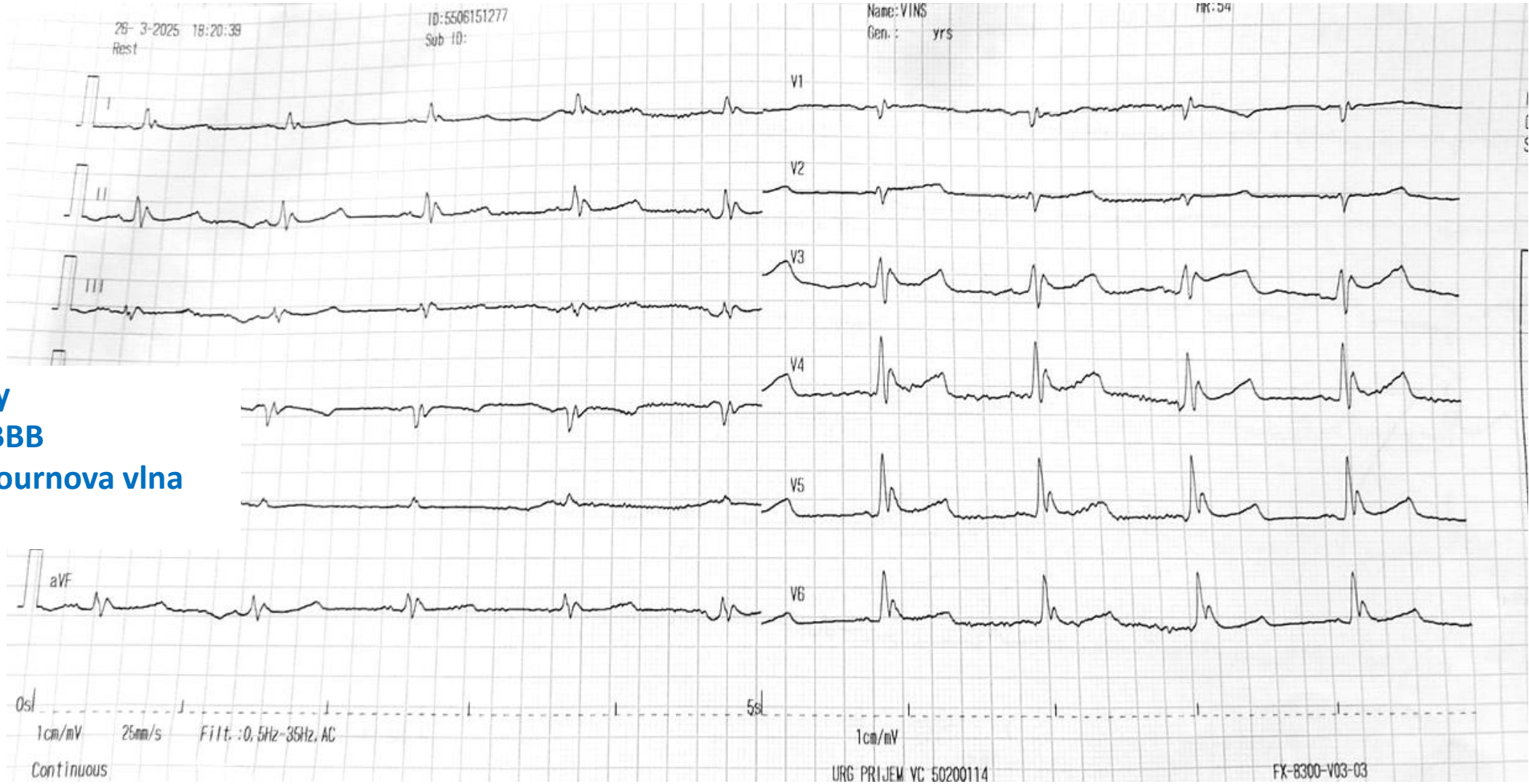


Krátký EKG kvíz:

EKG 1

Muž, 1974

- Nalezen venku,
- ebrieta
- Soporozní
- TT 33st C



1: STEMI přední stěny
2: plicní embolie s RBBB
3: Hypotermie – Osbournova vlna
4. Syndrom lQT

EKG 1

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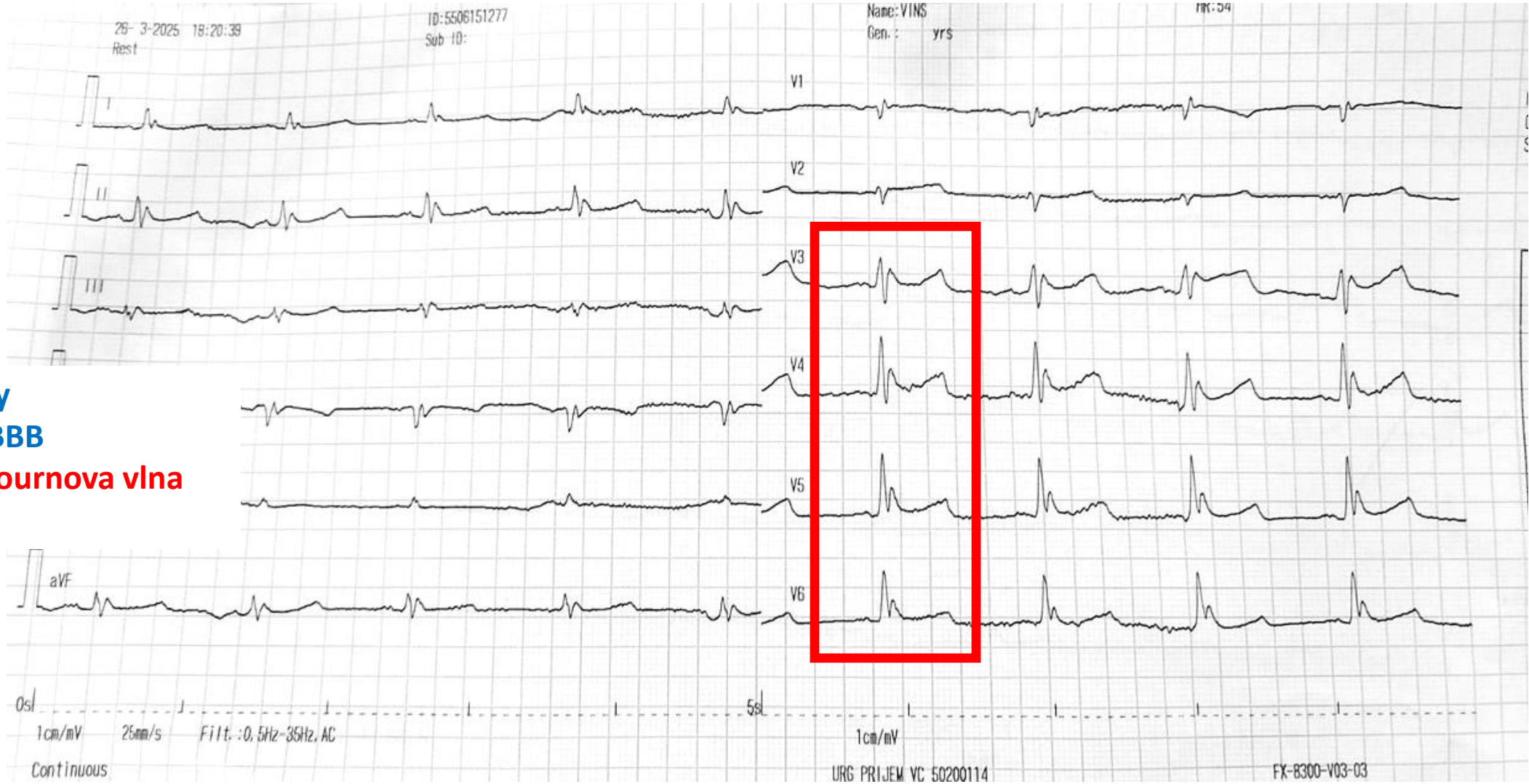

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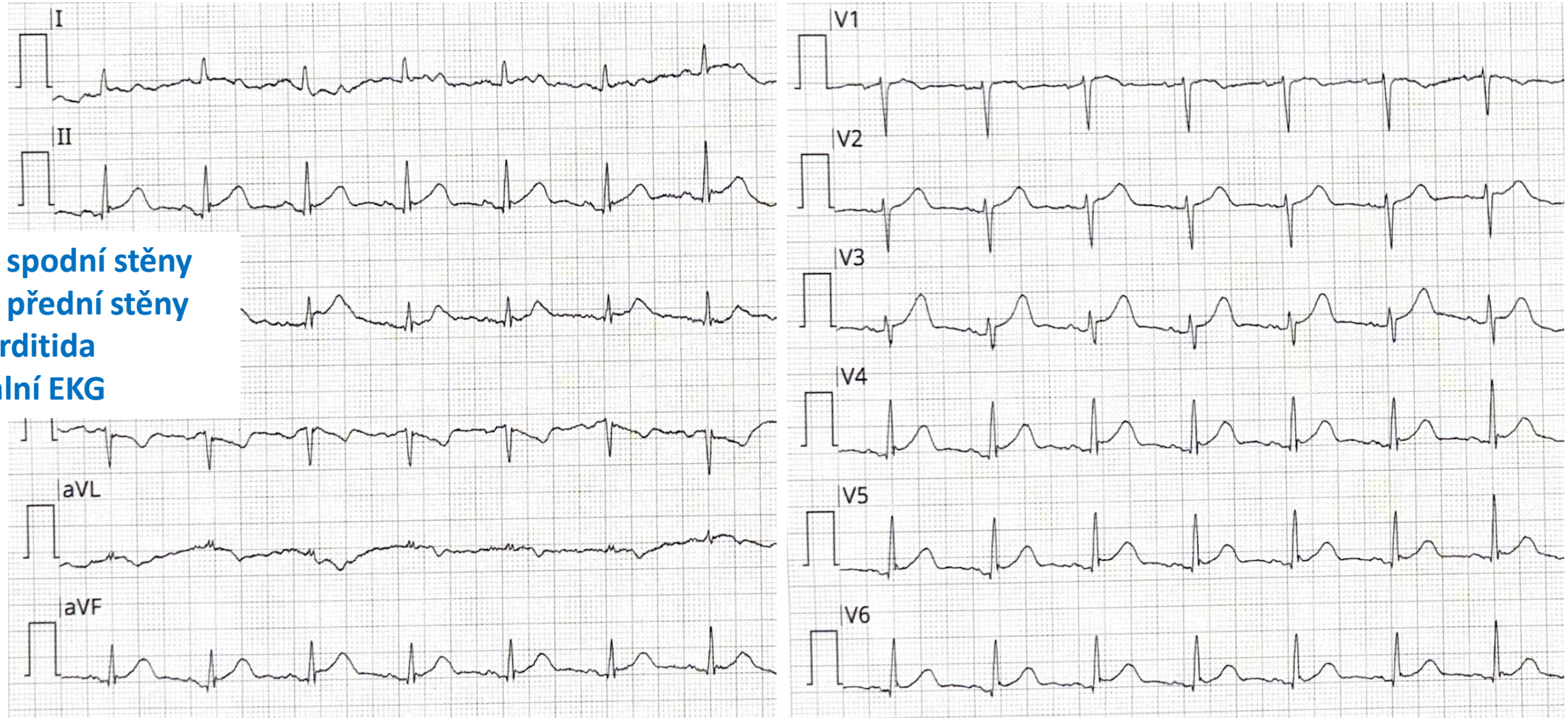
EKG 2

Žena, 1962

- Bolesti na hrudi s vazbou na nádech

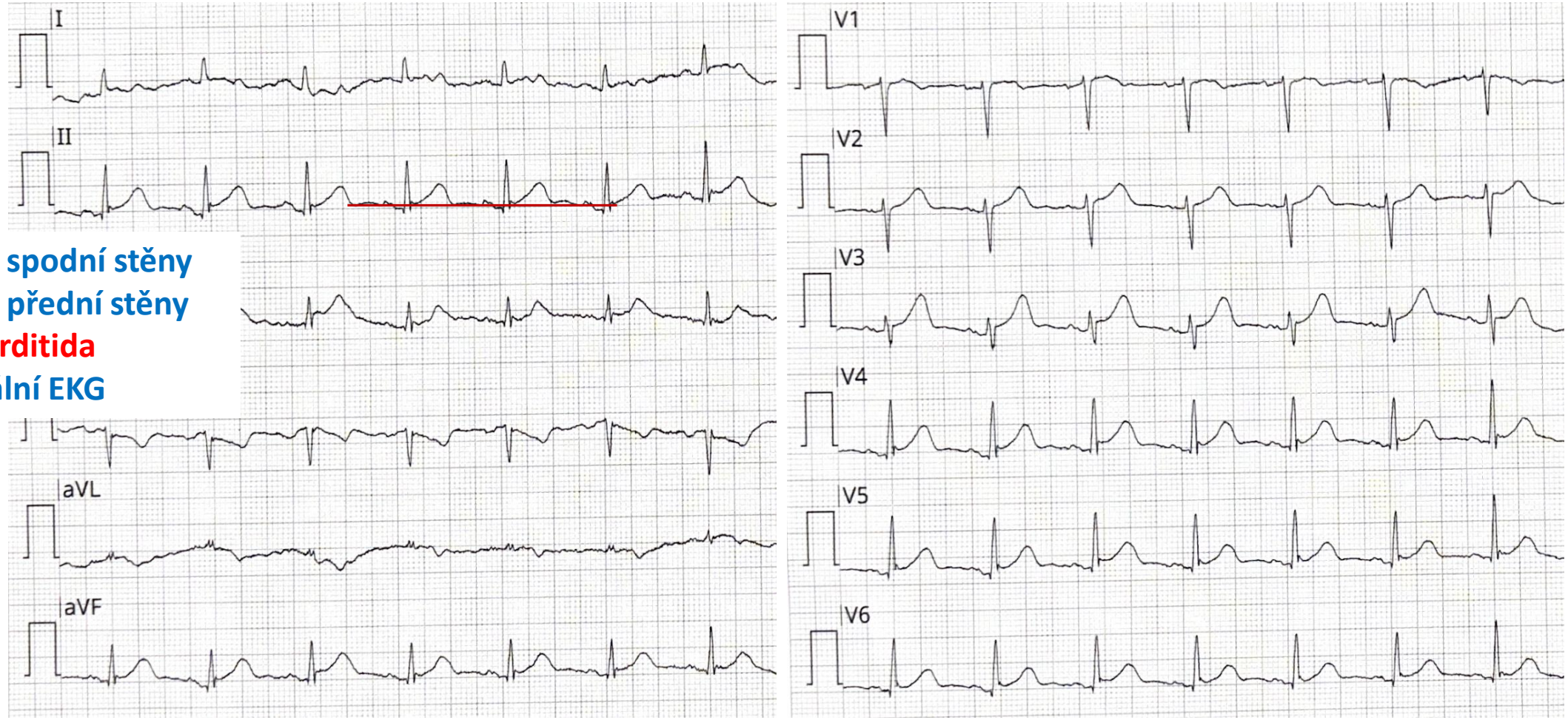


1: STEMI spodní stěny
2: STEMI přední stěny
3: Perikarditida
4: normální EKG

EKG 2

Žena, 1962

- Bolesti na hrudi s vazbou na nádech



1: STEMI spodní stěny
2: STEMI přední stěny
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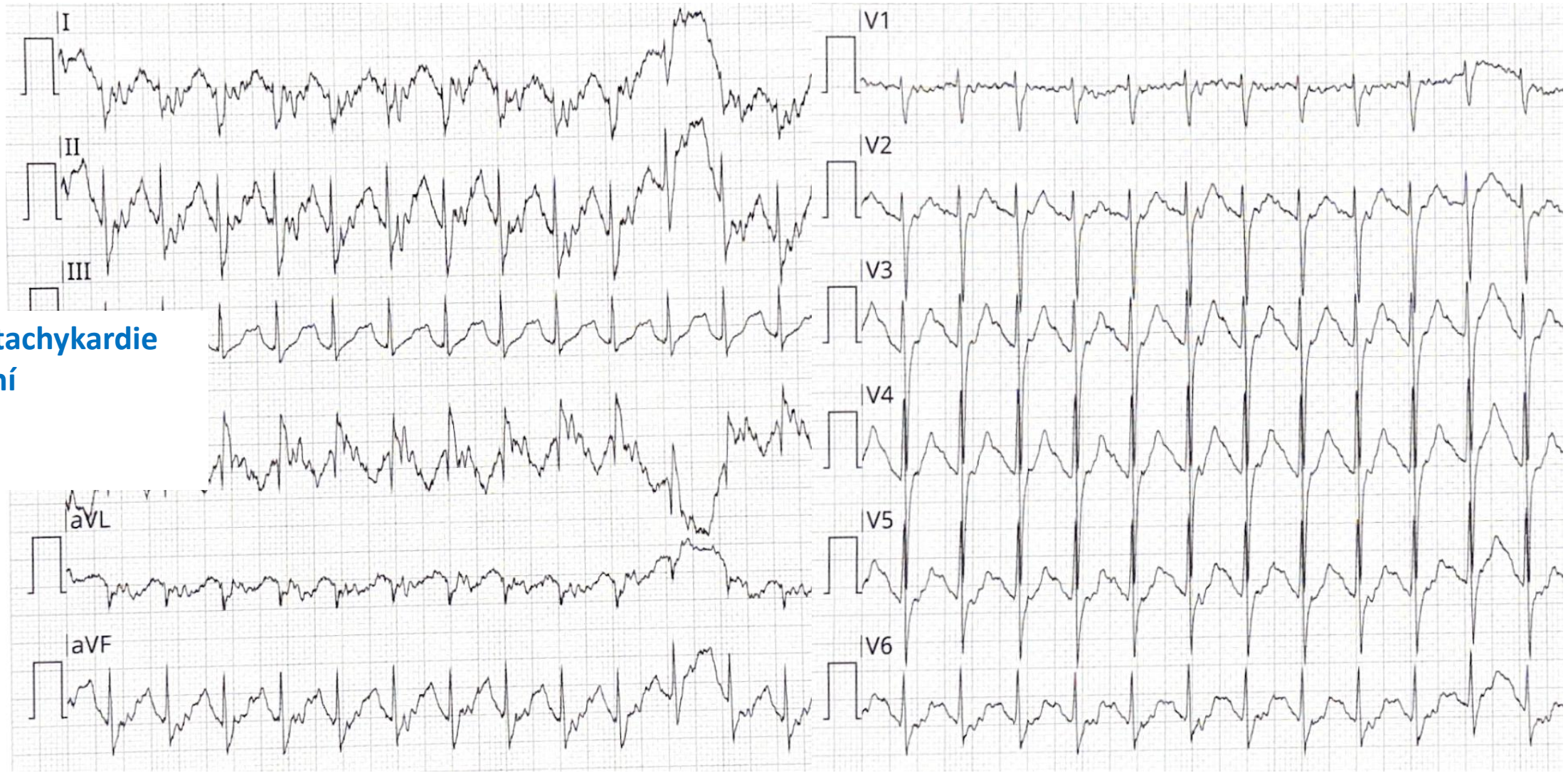
4: normální EKG

EKG 3

Muž, 1988

- Palpitace
- Slabost
- Dušnost

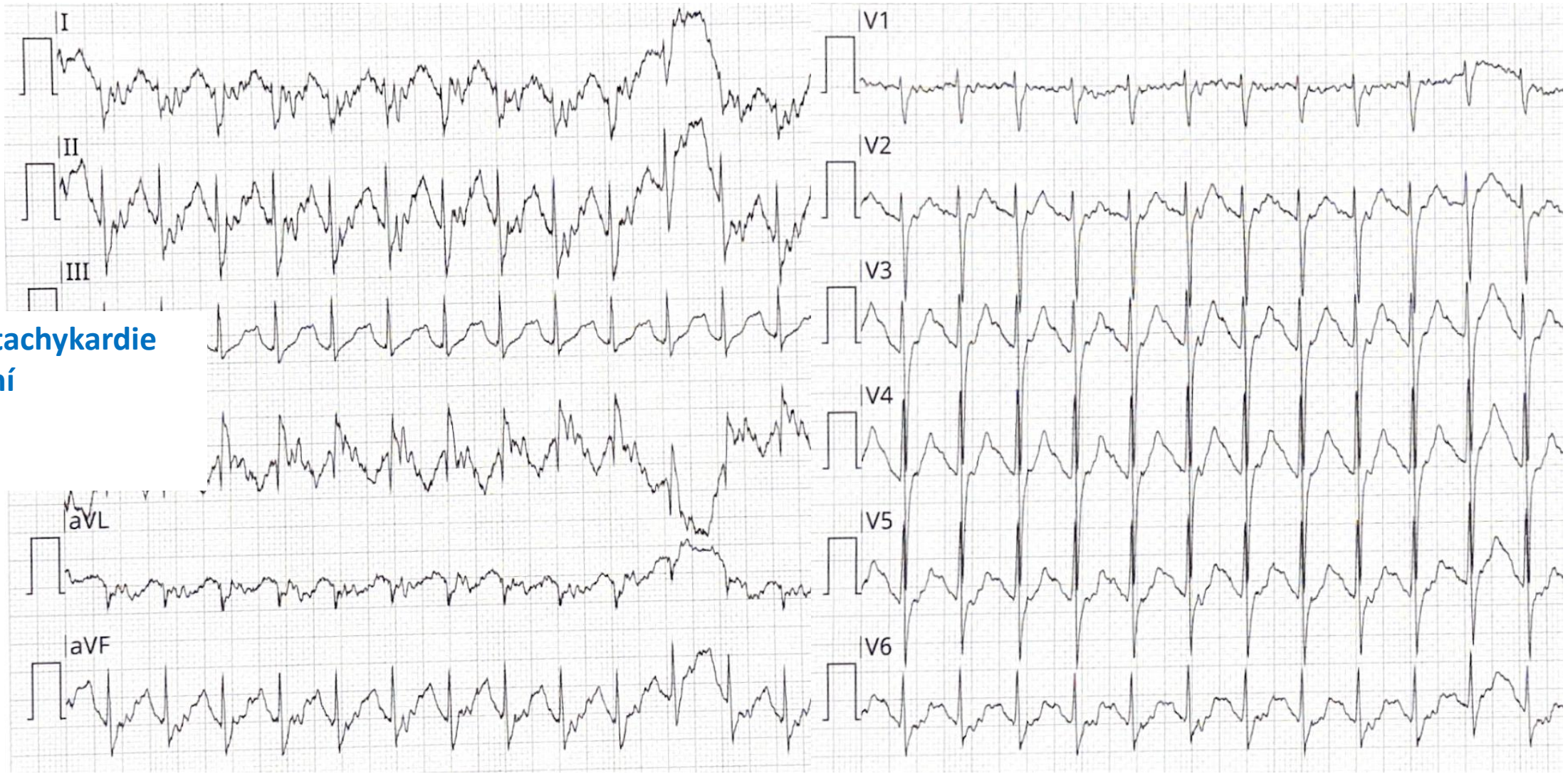


1: Komorová tachykardie
2: Fibrilace síní
3: Flutter síní
4: AVNRT

EKG 3

Muž, 1988

- Palpitace
- Slabost
- Dušnost



1: Komorová tachykardie
2: Fibrilace síní
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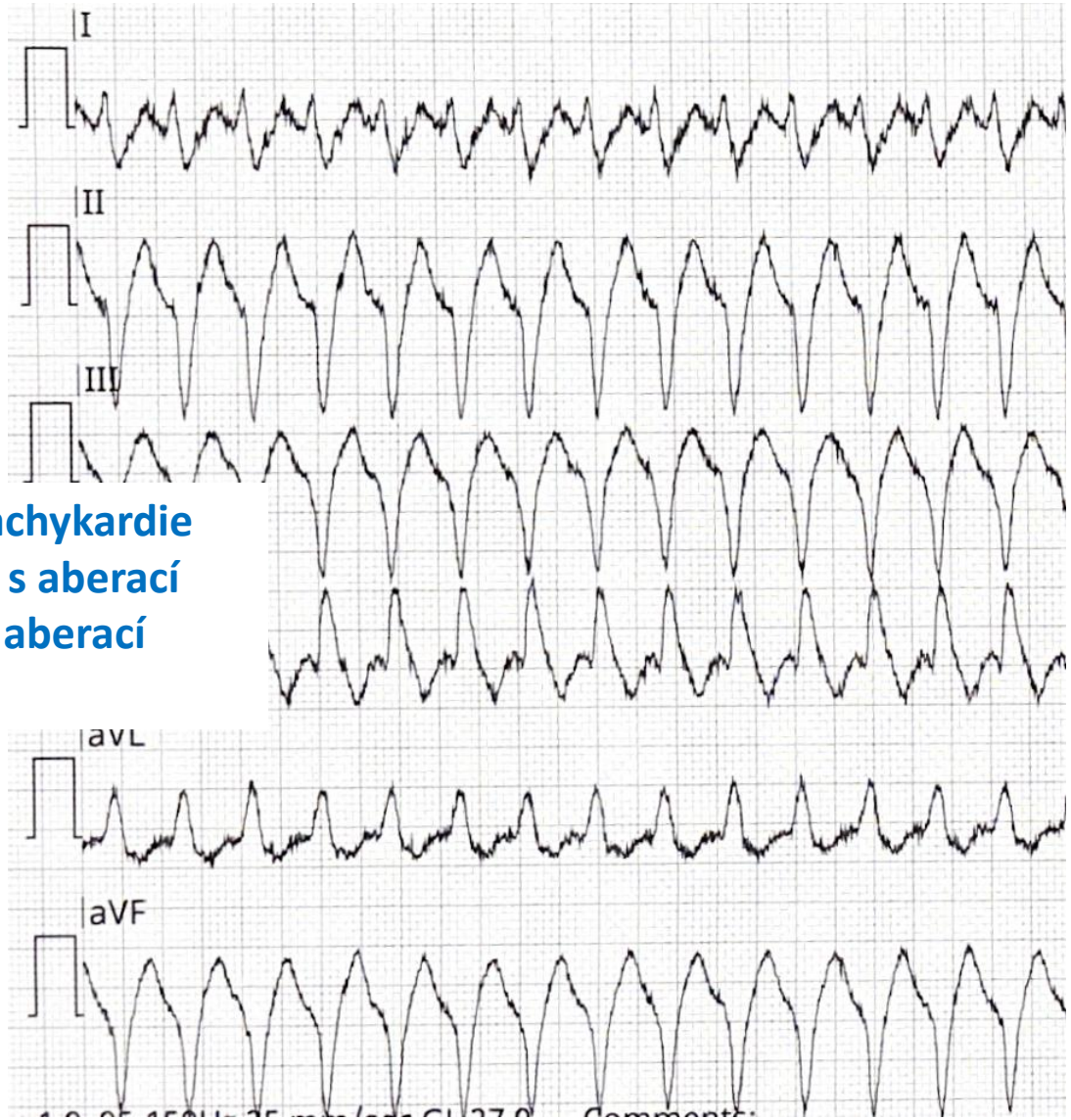
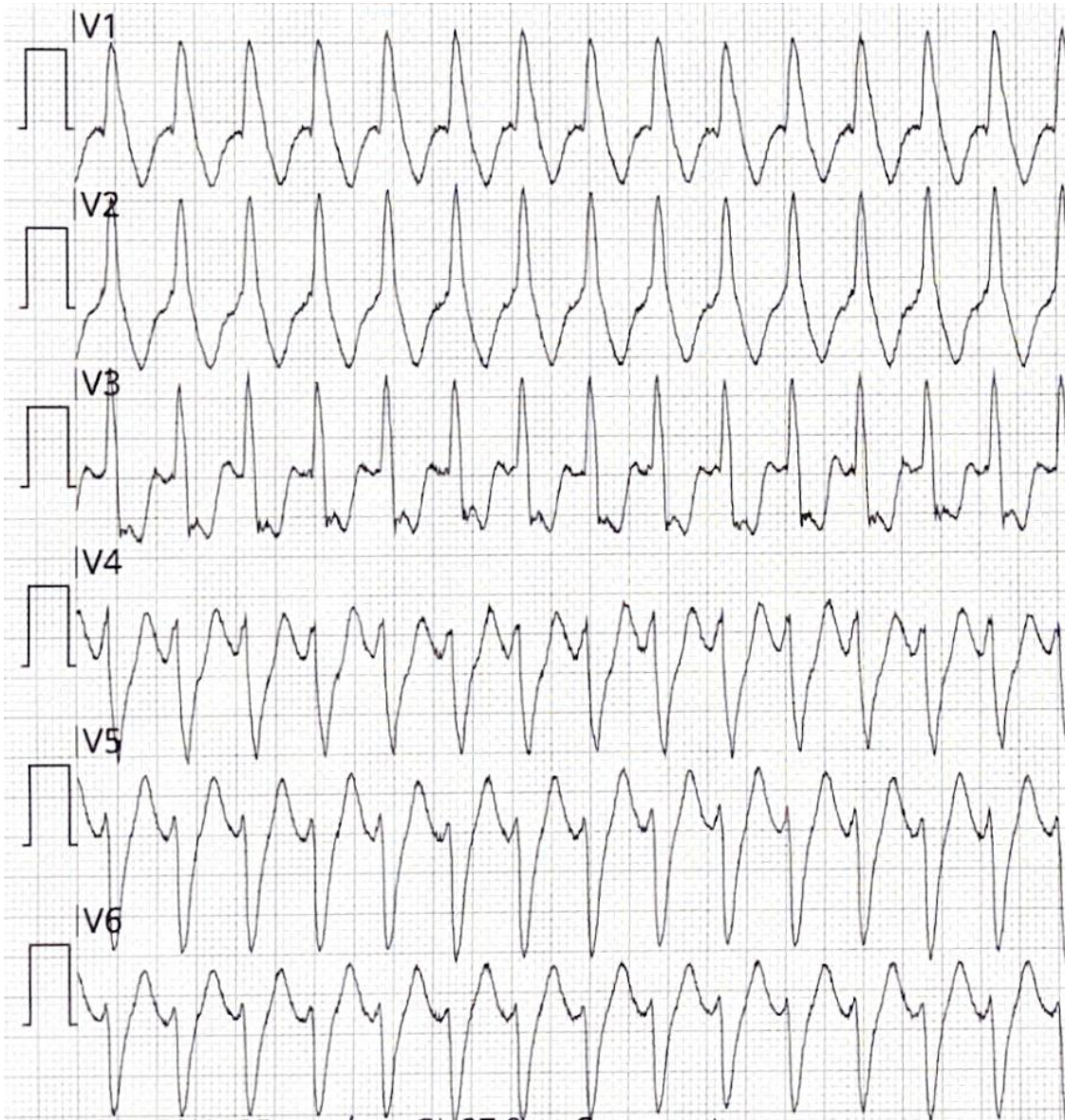
4: AVNRT

EKG 4

Muž, 1949
- Palpitace
- Slabost
- Dušnost
- St.p. IM

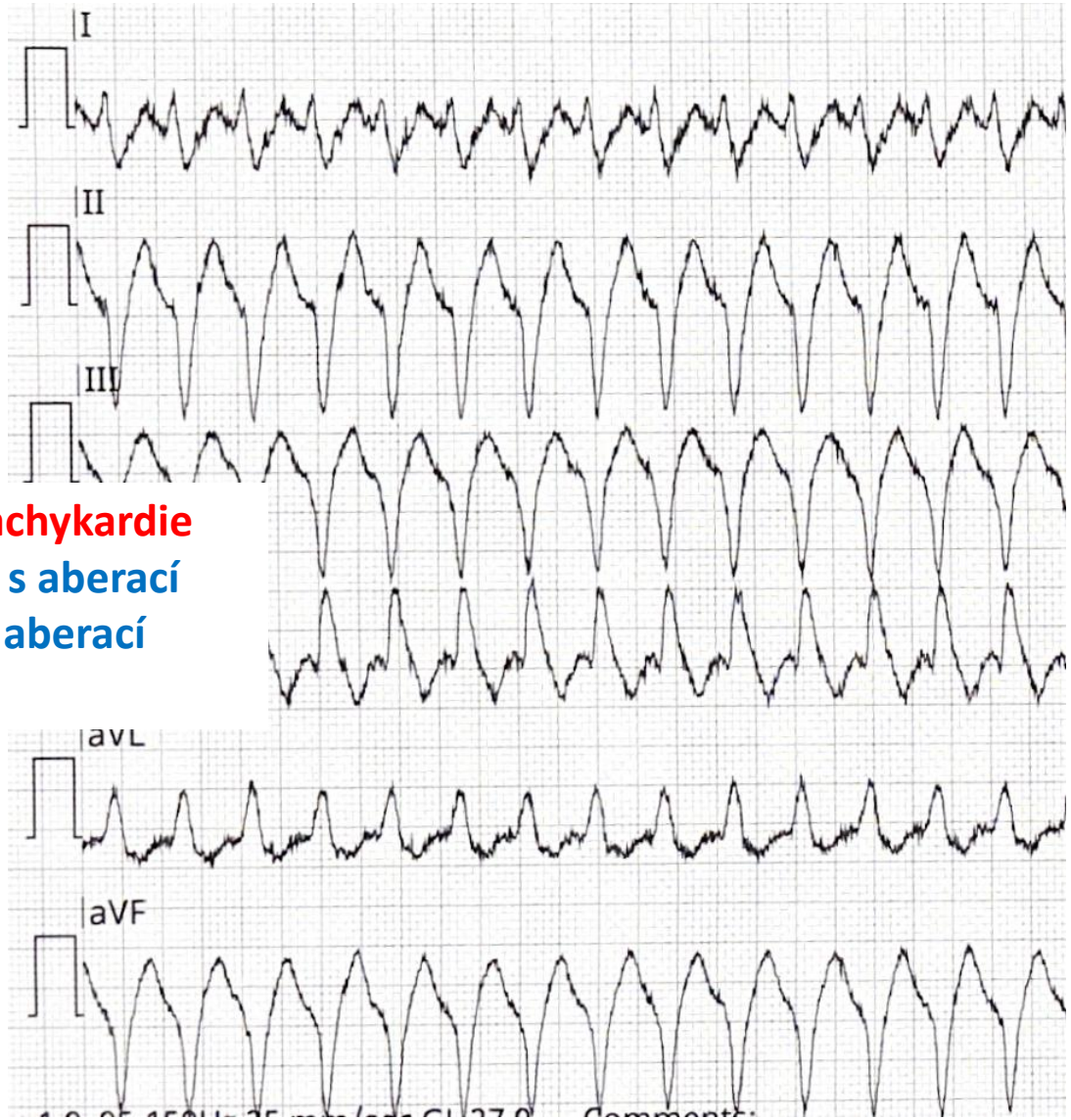


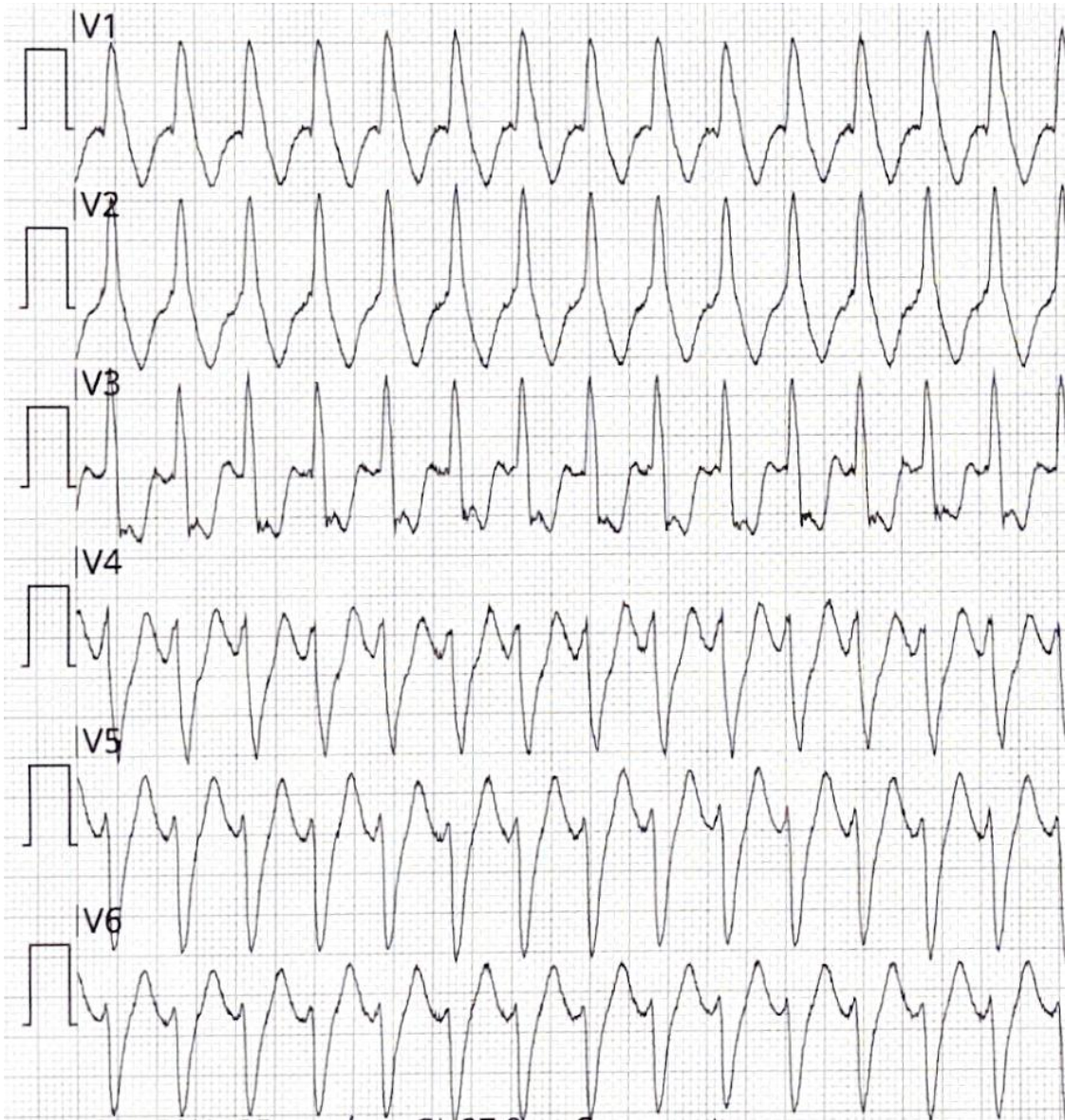


1: Komorová tachykardie
2: Fibrilace síní s aberací
3: Flutter síní s aberací
4: AVNRT

EKG 4

Muž, 1949
- Palpitace
- Slabost
- Dušnost
- St.p. IM





1: Komorová tachykardie
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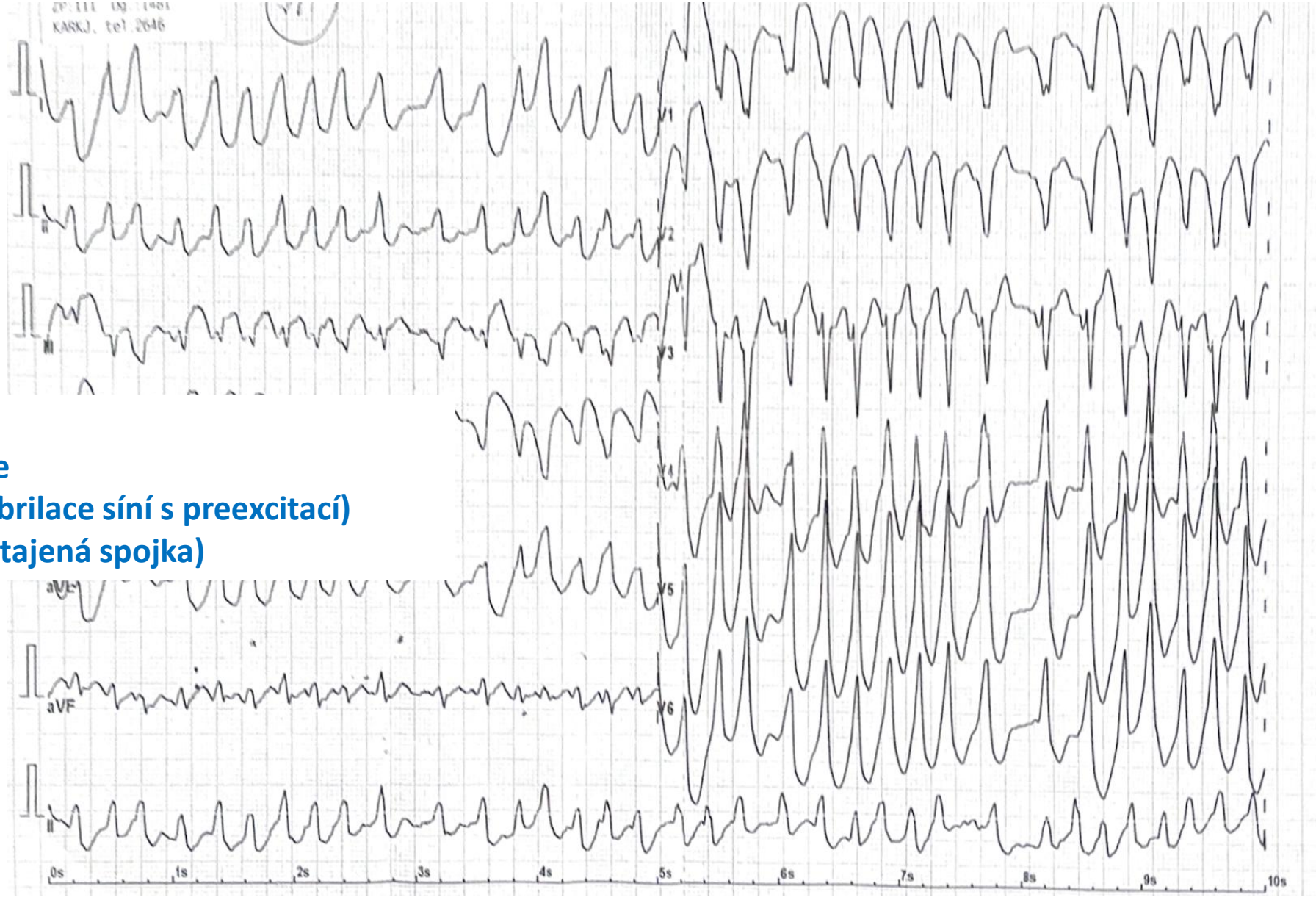
3: Flutter síní s aberací
4: AVNRT

EKG 5

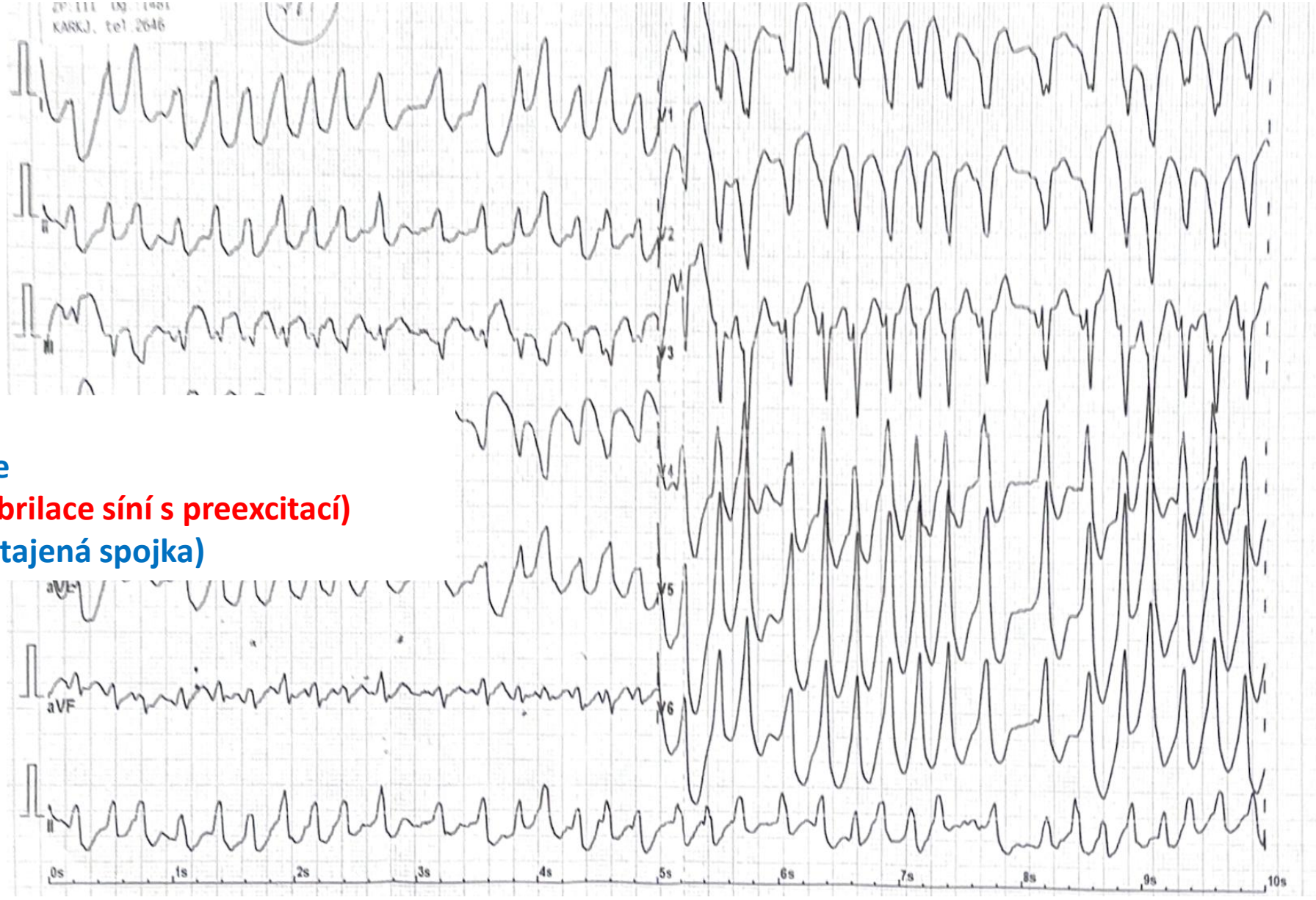
Muž, 1970
- Palpitace
- Slabost
- Dušnost



1: Artefakty
2: Komorová fibrilace
3: FBI tachykardie (fibrilace síní s preexcitací)
4: CIA tachykardie (utajená spojka)

EKG 5

Muž, 1970
- Palpitace
- Slabost
- Dušnost



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FZS TUL

Děkuji za pozornost